Level 3 Diploma in Road Tunnel Operations

Qualification Specification

Contents

Introduction

The Level 3 Diploma in Road Tunnel Operations is as aimed at staff in road tunnel control rooms who manage traffic and Life Support Engineering Systems (LSES) associated with the tunnel structure, utilising patrols and incident support vehicles.

The awarding organisation for the qualification is ProQual Awarding Body and the regulatory body is the Office of Qualifications and Examinations Regulation (Ofqual). The specification for the qualification has been approved by the Welsh Government for use by centres in Wales and by the Council for the Curriculum Examinations and Assessment (CCEA) for use by centres in Northern Ireland.

Qualification Profile

Qualification title	**ProQual Level 3 Diploma in Road Tunnel Operations**
Ofqual qualification number	600/7975/7
Level	Level 3
Total qualification time	460
Guided learning hours	240
Assessment	Pass or fail Internally assessed and verified by centre staff External quality assurance by ProQual verifiers
Qualification start date	1 February 2013
Qualification end date	

Entry Requirements

There are no formal entry requirements for this qualification.

Centres should carry out an **initial assessment** of candidate skills and knowledge to identify any gaps and help plan the assessment.

Qualification Structure

Candidates must complete 10 Mandatory units plus a minimum of 1 Optional unit.

Mandatory Units – complete ALL units			
Unit Reference Number	**Unit Title**	**Unit Level**	**GLH**
Y/504/6744	Introduction to Safety in Road Tunnel Environments	3	20
D/504/6745	Introduction to Road Tunnel Control Room Operational and Emergency Procedures	3	20
H/504/6746	Road Tunnel Structures and the Safety Function Provided by the Life Safety Engineering Systems	3	30
K/504/6747	Tunnel Systems and Equipment for the Safe Operation of Road Tunnels	3	20
M/504/6748	Operating Road Tunnel Life Safety Engineering Systems – Tunnel Ventilation	3	20
T/504/6752	Operating Road Tunnel Life Safety Engineering Systems – Facilities for the Road User and Evacuation Systems	3	20
A/504/6753	Operating Road Tunnel Life Safety Engineering Systems – Facilities for the Emergency Services	3	10
F/504/6754	Operating Road Tunnel Life Safety Engineering Systems – CCTV Systems	3	10
J/504/6755	Implement Road Tunnel Emergency Procedures	3	40
H/504/6763	Managing Fire, Flood, Chemical, Biological, Radiological, Nuclear or Explosive Events in Road Tunnels	3	20
Optional Units – a minimum of 1 unit			
Unit Reference Number	**Unit Title**	**Unit Level**	**GLH**
T/504/6749	Operating Road Tunnel Life Safety Engineering Systems – Tunnel Drainage	3	15
M/504/6751	Operating Road Tunnel Life Safety Engineering Systems – Active Fire Suppression	3	20
L/504/6756	Liaise with the Media Regarding Operational Traffic Management	3	20
R/504/6757	Respond to and Provide Support at Incidents on the Road Network	3	25
Y/504/6758	Patrol Road Tunnels in Official Vehicles on the Road Network	3	25
D/504/6759	Escort Vehicles to a Place of Safety on the Road Network	3	20
R/504/6760	Remove Vehicles and Obstructions from the Road Network	3	30
Y/504/6761	Respond to Traffic Management Incidents – Bronze Command	3	25
D/504/6752	Preparing for the Coaching Role	3	15

Centre Requirements

Centres must be approved to offer this qualification. If your centre is not approved please complete and submit form **ProQual Additional Qualification Approval Application**.

Staff
Staff delivering this qualification must be appropriately qualified and occupationally competent.

Assessors/Internal Quality Assurance
For each competence-based unit centres must be able to provide at least one assessor and one internal quality assurance verifier who are suitably qualified for the specific occupational area. Assessors and internal quality assurance verifiers for competence-based units or qualifications will normally need to hold appropriate assessor or verifier qualifications, such as:

- Award in Assessing Competence in the Work Environment
- Award in Assessing Vocationally Related Achievement
- Certificate in Assessing Vocational Achievement
- Award in the Internal Quality Assurance of Assessment Processes and Practices
- Certificate in Leading the Internal Quality Assurance of Assessment Processes and Practices

Assessors must be occupationally competent in the unit(s) they are assessing. This means that each assessor must, according to current sector practice, be competent in the functions covered by the unit(s) they are assessing. They will have gained their occupational competence working within the Road Tunnel Management Sector or within an appropriate occupational sector. They are not required to occupy a position in the organisation more senior than that of the candidate(s) they are assessing. Centres must be alert to the risks that all such arrangements could present and ensure that sufficient quality controls are in place through the internal quality assurance verification process to minimise the possibility of collusion between candidates and assessors. Assessors must be able to demonstrate consistent application of the skills and the current supporting knowledge and understanding in the context of a recent role directly related to the units they are assessing as a practitioner, trainer or manager.

Support for Candidates

Materials produced by centres to support candidates should:

- enable them to track their achievements as they progress through the learning outcomes and assessment criteria;
- provide information on where ProQual's policies and procedures can be viewed;
- provide a means of enabling Internal and External Quality Assurance staff to authenticate evidence

Assessment

Candidates must demonstrate the level of knowledge described in the units. Assessment is the process of measuring a candidate's knowledge and understanding against the standards set in the qualification.

Each candidate is required to produce evidence which demonstrates their achievement of all of the learning outcomes and assessment criteria for each unit.

Evidence can include:
- assignments/projects/reports
- worksheets
- portfolio of evidence
- record of oral and/or written questioning
- candidate test papers

Learning outcomes set out what a candidate is expected to know, understand or be able to do.

Assessment criteria specify the standard a candidate must meet to show the learning outcome has been achieved.

Learning outcomes and assessment criteria for this qualification can be found from page 8 onwards.

Internal Quality Assurance

An internal quality assurance verifier confirms that assessment decisions made in centres are made by competent and qualified assessors, that they are the result of sound and fair assessment practice and that they are recorded accurately and appropriately.

Adjustments to Assessment

Adjustments to standard assessment arrangements are made on the individual needs of candidates. ProQual's Reasonable Adjustments Policy and Special Consideration Policy sets out the steps to follow when implementing reasonable adjustments and special considerations and the service that ProQual provides for some of these arrangements.

Centres should contact ProQual for further information or queries about the contents of the policy.

Results Enquiries and Appeals

All enquiries relating to assessment or other decisions should be dealt with by centres, with reference to ProQual's Enquiries and Appeals Procedures.

Certification

Candidates who achieve the requirements for qualifications will be awarded:

- A certificate listing the unit achieved, and
- A certificate giving the full qualification title -

  ProQual Level 3 Diploma in Road Tunnel Operations

Claiming certificates

Centres may claim certificates for candidates who have been registered with ProQual and who have successfully achieved the requirements for a qualification. All certificates will be issued to the centre for successful candidates.

Replacement certificates

If a replacement certificate is required a request must be made to ProQual in writing. Replacement certificates are labelled as such and are only provided when the claim has been authenticated. Refer to the Fee Schedule for details of charges for replacement certificates.

LEARNING OUTCOMES AND ASSESSMENT CRITERIA

Unit Y/504/6744
Introduction to Safety in Road Tunnel Environments

This unit is intended for both control room and on-road staff. It aims to provide the candidate with an overview of road tunnels and why road tunnels are different from the open road.

Learning Outcome - The learner will:	Assessment Criterion - The learner can:
1 Know and understand the potential hazards of road tunnel environments	1.1 Explain the main risks that arise owing to a road tunnel being a public enclosed space (e.g. ventilation, lighting and drainage)
2 Know and understand that small tunnel incidents may rapidly escalate into serious incidents	2.1 Explain how small events can rapidly lead to a serious incident (e.g. "chains of causality")
	2.2 Explain the importance of rapidly responding to small events in order to prevent the escalation of seriousness
3 Know and understand the legal framework and standards that apply to road tunnel environments	3.1 Explain the principal legislation that applies to their role, any powers they may exercise as part of their duties and how such powers should be discharged
	3.2 Explain the principal standards that apply to their role, the duties created by the standards and how such duties should be discharged
4 Know and understand the importance of safety procedures followed in road tunnel environments and how the procedures are used to control risks	4.1 Explain the main safety procedures in use in their workplace
	4.2 Explain how safety procedures rely on knowledge of each of the road tunnel systems
	4.3 Explain how safety procedures are used to respond to incidents and control risks

Assessment

There must be valid, authentic and sufficient for all the assessment criteria. However, one piece of evidence may be used to meet the requirements of more than one learning outcome or assessment criterion.

Unit D/504/6745
Introduction to Road Tunnel Control Room Operational and Emergency Procedures

This unit is intended for both control room and on-road staff. It aims to provide candidates with an overview of the Control Room, the Control Room functions, procedures, IT support systems and main control systems.

Learning Outcome - The learner will:	Assessment Criterion - The learner can:
1 Know and understand the scope of road tunnel Control Room responsibilities	1.1 Explain the scope and extent of duties undertaken by Control Room staff at their workplace
	1.2 Identify the areas for which Control Room staff do not have any responsibilities
2 Know and understand the road tunnel Control Room housekeeping procedures	2.1 Explain each of the Control Room housekeeping procedures (e.g. issuing of keys, radios, fire drills, etc) and how the procedures are implemented
	2.2 Demonstrate the Control Room housekeeping procedures
3 Know and understand the scope of application of the road tunnel Control Room Operational and Emergency Procedures	3.1 Explain the scope of the Control Room Operational Procedures
	3.2 Explain the scope of the Control Room Emergency Procedures
	3.3 Identify the reason for each procedure and the risk that each procedure is intended to control
4 Know, understand and be able to use the road tunnel Control Room IT support systems	4.1 Explain how to use each of the Control Room IT support systems (e.g. fax, telephone, email etc.) in use in their workplace
	4.2 Demonstrate the use of each of the Control Room IT support systems in use in their workplace
5 Understand the function of the road tunnel Control Room operational control systems	5.1 Explain the function and scope of each of the main Control Room operational control systems (e.g. SCADA, COBS, CCTC etc)
6 Know and understand the protocols for the statutory release of information	6.1 Identify the Data Controller at their work location
	6.2 Explain the protocols for the release of controlled information
	6.3 Explain any limitations or restrictions on the release of such data

Assessment

There must be valid, authentic and sufficient for all the assessment criteria. However, one piece of evidence may be used to meet the requirements of more than one learning outcome or assessment criterion.

Learning Outcome 3
It is expected that this will be limited to an overview of the individual procedures, the reason for each one and the risks it is intended to control.

Learning Outcome 6
Including the release of CCTV recordings to the Police, solicitors, etc.

Unit H/504/6746
Road Tunnel Structures and the Safety Function Provided by the Life Safety Engineering Systems

This unit is intended for both control room and on-road staff. It aims to provide candidates with an overview of the Tunnels structures and the function of each of the Tunnel Life Safety Engineering Systems (LSES).

Learning Outcome - The learner will:	Assessment Criterion - The learner can:
1 Know and understand the main features of the road tunnel structure, geometry and road speeds	1.1 Explain the main features of the tunnel structure and geometry, including road speeds under the various modes of tunnel operation at their workplace
	1.2 Explain the limitations of the tunnel structure and geometry including road speeds under the various modes of tunnel operation at their workplace
2 Know and understand the functions of road tunnel Life Safety Engineering Systems	2.1 Identify the tunnel Life Safety Engineering Systems in use at their workplace
	2.2 Explain the main functions of each of the tunnel Life Safety Engineering Systems in use at their workplace
3 Know and understand the importance of road tunnel Life Safety Engineering Systems maintenance and how maintenance is implemented	3.1 Explain the minimum safe operating requirement for each of the tunnel Life Safety Engineering Systems at their workplace
	3.2 Explain the importance of maintenance for each of the tunnel Life Safety Engineering Systems at their workplace
	3.3 Explain how maintenance is used to maintain the Minimum Safe Operating Requirement

Assessment

There must be valid, authentic and sufficient for all the assessment criteria. However, one piece of evidence may be used to meet the requirements of more than one learning outcome or assessment criterion.

Learning Outcome 1
The number of topic areas in the unit depends upon the number of tunnels operated at the candidate's location and the extent of the Life Safety Engineering Systems provided. The candidate will know and understand the Safety Function provided by each of the following systems in use at the tunnel installations for which they have responsibility (if any of these systems are not installed then that topic does not apply. Similarly, if there are any systems in use at the candidate's tunnel(s) that are not in the following list they should be included as "Innovative Safety Systems") :

- Tunnel Geometry (heights, widths, curvature, speed, limitations, etc.)
- Tunnel Structure Fire Protection
- Tunnel Electrical Power Distribution
- Tunnel back-up Power Systems
- Tunnel Ventilation
- Tunnel Lighting
- Tunnel Fire Main and Water Supplies
- Tunnel Active Fire Suppression Systems
- Tunnel Plant Monitoring and Control Systems
- Tunnel Drainage
- Closed Circuit Television (CCTV)
- Variable Message Signing / Signalling System and Traffic Signals
- Communications Systems
- Emergency Panels
- Smoke Control Panels or Emergency Services Communications Panels
- Escape Routes and Escape Route Systems, Signing and Signalling
- Evacuation Public Address Systems (PA)
- Acoustic Beacons
- Radio Re-Broadcast
- Automatic Number-Plate Reading (ANPR)
- Vehicle Incident Detection Systems
- Dangerous Goods Vehicle Detection Systems
- Vehicle Hazard Monitoring Systems
- Distributed Temperature Sensing Systems
- Environmental Sensing Systems
- Innovative Safety Systems

Unit K/504/6747
Tunnel Systems and Equipment for the Safe Operation of Road Tunnels

This unit is about understanding any permanently sited equipment within or on the approach to the tunnel(s) in the candidate's area, its importance, its safe operation, regular testing and reporting of any failure.

Learning Outcome - The learner will:	Assessment Criterion - The learner can:
1 Know the purpose and features of tunnel systems available for the safe operation of road tunnels within their organisation's area	1.1 Identify the systems within the tunnel(s) of their area of operation 1.2 Summarise the purpose and control operational use of tunnel systems 1.3 Describe the control and use of tunnel systems and equipment 1.4 Explain any inter-dependencies they may have and any hazards they present in normal operational use 1.5 Identify the minimum level of availability of safety equipment for the safe operation of the tunnel network 1.6 Explain the test procedures associated with the systems 1.7 Explain the escalation process in the event of a single or multiple failure to the systems
2 Be able to operate tunnel systems and equipment	2.1 Explain the impact of multiple failures within the same or combination of systems 2.2 Report faults with the equipment and identify the appropriate priority associated with the loss of each system 2.3 Apply the relevant settings and processes to the system(s) to cover the situations identified 2.4 Monitor the function and effectiveness of the equipment used 2.5 Return all systems to a steady state and summarise the actions taken

Assessment

There must be valid, authentic and sufficient for all the assessment criteria. However, one piece of evidence may be used to meet the requirements of more than one learning outcome or assessment criterion.

Unit M/504/6748
Operating Road Tunnel Life Safety Engineering Systems – Tunnel Ventilation

This unit is intended for both control room and on-road staff. It aims to provide the candidate with a detailed understanding of the Tunnel Ventilation systems and how they must be operated under both Normal and Emergency Conditions.

Learning Outcome - The learner will:	Assessment Criterion - The learner can:
1 Know and understand the different types of mechanical ventilation in use in the road tunnel industry	1.1 Explain the various types of ventilation systems in current use 1.2 Identify the types of ventilation systems in use at their workplace 1.3 Explain how the various types of ventilation systems are implemented
2 Know and understand the tunnel ventilation system in use at their workplace	2.1 Explain the operational capacity of the ventilation system and how to access its operational interface 2.2 Explain the time requirements for starting, stopping and reversing (if applicable) the ventilation system 2.3 Explain any operational limitations of the ventilation system equipment 2.4 Explain how Control Room staff determine the operational status of the ventilation system and the reporting lines and associated actions if a system failure is identified
3 Know and understand how, why and when the tunnel ventilation system is operated during normal operation	3.1 Describe how, in normal operation, the tunnel ventilation system controls exhaust pollution 3.2 Explain the procedures for starting, stopping and reversing (if applicable) the tunnel ventilation system 3.3 Demonstrate starting, stopping and reversing (if applicable) the tunnel ventilation system
4 Know and understand how, why and when the tunnel ventilation system is operated during Emergency Conditions	4.1 Explain the terms: • fire size • heat release rate • critical velocity as applied to ventilating tunnel fires 4.2 Describe how and when, during Emergency Conditions, the tunnel ventilation system operates 4.3 Explain how the tunnel ventilation system can be started, stopped and reversed (if applicable) in accordance with the operational requirements of attending Category 1 Responders 4.4 Demonstrate starting, stopping and reversing (if applicable) the tunnel ventilation system in accordance with the operational requirements of attending Category 1 Responders

Learning Outcome - The learner will:	Assessment Criterion - The learner can:
5 Know and understand the dangers associated with over ventilating and under ventilating a tunnel during a tunnel fire incident	5.1 Explain the likely effects of over ventilating a tunnel fire 5.2 Explain the likely effects of under ventilating a tunnel fire

Assessment

There must be valid, authentic and sufficient for all the assessment criteria. However, one piece of evidence may be used to meet the requirements of more than one learning outcome or assessment criterion.

Learning Outcome 2, Assessment Criteria 2.3
For example, limitations on the number of start / stop / reversal cycles permissible per hour etc.

Learning Outcome 4, Assessment Criteria 4.3
Category 1 Responders - for example, the Fire and Rescue Services

Unit T/504/6752
Operating Road Tunnel Life Safety Engineering Systems – Facilities for the Road User and Evacuation Systems

This unit is intended for both control room and on-road staff. It aims to provide the candidate with a detailed understanding of those LSES which comprise the Tunnel Evacuation Systems and how they must be operated.

Learning Outcome - The learner will:	Assessment Criterion - The learner can:
1 Know and understand the road tunnel Life Safety Engineering Systems which comprise the safety facilities for the road user	1.1 Describe each of the life safety engineering systems that comprise the safety facilities for the road user and their frequency of provision within the tunnel(s) at their workplace
	1.2 Explain the function of each of the safety facilities for the road user systems
	1.3 Explain how the operational status of each system is determined and the reporting lines and associated actions if a system failure is identified
2 Know and understand the road tunnel Life Safety Engineering Systems which comprise the Tunnel Evacuation Systems and know their limitations	2.1 Describe each of the life safety engineering systems that comprise the tunnel evacuation systems and their frequency of provision within the tunnel(s) at their workplace
	2.2 Explain the function, or range of functions, available from each of the systems
	2.3 Explain how the operational status of each system is determined and the reporting lines and associated actions if a system failure is identified
3 Know and understand how, why and when the road tunnel Evacuation Systems are operated during Emergency Conditions	3.1 Explain how each of the tunnel evacuation systems are operated
	3.2 Demonstrate the operation of the tunnel evacuation systems
	3.3 Explain the procedures to be followed for the operation of the evacuation systems during an emergency
4 Know and understand the dangers associated with false activation of each road tunnel Evacuation System during normal operation	4.1 Explain the dangers associated with false activation of each tunnel evacuation system during normal operation
	4.2 Explain the processes and procedures to be followed to prevent false activation of the evacuation system
	4.3 Explain the processes and procedures to be followed in the event that a false activation of the evacuation system occurs

Learning Outcome - The learner will:	Assessment Criterion - The learner can:
5 Know and understand the dangers associated with the failure to operate of each road tunnel Evacuation System during Emergency Conditions	5.1 Explain the effect of the failure of each of the tunnel evacuation systems 5.2 Explain the areas of system function duplication that could be used in the event of such failure
6 Know and understand the behaviour of road tunnel users during road tunnel fires	6.1 Explain the behaviour of road tunnel users during tunnel fires and other such emergencies 6.2 Explain the importance of road tunnel controllers in delivering evacuation messages and ensuring effective evacuation from a road tunnel incident 6.3 Explain how road tunnel controllers ensure that the behaviour of tunnel users is appropriately managed during tunnel operations

Assessment

There must be valid, authentic and sufficient for all the assessment criteria. However, one piece of evidence may be used to meet the requirements of more than one learning outcome or assessment criterion.

Unit A/504/6753
Operating Road Tunnel Life Safety Engineering Systems – Facilities for the Emergency Services

This unit is intended for both control room and on-road staff. It aims to provide the candidate with a detailed understanding of those LSES which comprise Facilities for the Emergency Services and how they must be operated.

Learning Outcome - The learner will:	Assessment Criterion - The learner can:
1 Know and understand the road tunnel Life Safety Engineering Systems which comprise the Facilities for the Emergency Services	1.1 Describe each of the road tunnel life safety engineering systems that comprise the facilities for the Emergency Services and their frequency of provision within the tunnel(s) at their workplace
	1.2 Explain the function, or range of functions, available from each of the systems
	1.3 Explain how the operational status of each system is determined and the reporting lines and associated actions if a system failure is identified
2 Know and understand the operational limitations of the road tunnel Life Safety Engineering Systems which comprise the Facilities for the Emergency Services	2.1 Describe the capabilities of each of the road tunnel life safety engineering systems that comprise the Facilities for the Emergency Services and any known operational limitations
3 Know and understand how the road tunnel Life Safety Engineering Systems which comprise the Facilities for the Emergency Services should be used	3.1 Explain who is responsible for the use of each of the road tunnel life safety engineering systems which comprise the Facilities for the Emergency Services and describe how each of the systems should be used
	3.2 Explain the process and procedures to be followed in the event that the Emergency Services appear to be operating such toad tunnel life safety engineering systems incorrectly

Assessment

There must be valid, authentic and sufficient for all the assessment criteria. However, one piece of evidence may be used to meet the requirements of more than one learning outcome or assessment criterion.

Unit F/504/6754
Operating Road Tunnel Life Safety Engineering Systems – CCTV Systems

This unit is intended for supervisors and control room staff. It is about fulfilling the basic requirements of understanding the legislation, policies and codes of practice for using CCTV; monitoring and dealing with issues on the road network at any particular time of day and identifying whether any possible traffic issues would be caused because of an incident or event on the road network.

Learning Outcome - The learner will:	Assessment Criterion - The learner can:
1 Know and understand the legislation, organisational policies and procedures for the use of CCTV to monitor the road network	1.1 Identify the legislation applicable to the use of CCTV to monitor the road network
	1.2 Explain the procedures to be followed for gaining authorisation to use CCTV
	1.3 Explain the procedures to be followed for dealing with requests for the recording of images on CCTV
	1.4 Describe the circumstances of inappropriate use of the CCTV system
2 Understand the operational uses and capabilities of their organisation's CCTV	2.1 Describe the capabilities of their organisation's CCTV system including pan, tilt and zoom
	2.2 Explain how the CCTV system logs any actions taken
	2.3 Describe the operation and maintenance requirements of the CCTV equipment
3 Be able to monitor and respond to incidents on the road network	3.1 Evaluate and prioritise incidents observed on the road network
	3.2 Summarise the options available for dealing with disruptions observed on the road network
	3.3 Notify appropriate agencies of the need to respond to incidents on the road network
	3.4 Summarise traffic management features available within CCTV systems monitoring their organisation's road network
	3.5 Apply procedures for accessing other stakeholder CCTV when dealing with an incident

Assessment

There must be valid, authentic and sufficient for all the assessment criteria. However, one piece of evidence may be used to meet the requirements of more than one learning outcome or assessment criterion.

Unit J/504/6755
Implement Road Tunnel Emergency Procedures

This unit is about understanding the risks associated with any incident within or on the approaches to a tunnel.

Learning Outcome - The learner will:	Assessment Criterion - The learner can:
1 Know and understand the requirements for dealing with incidents within and on the approach to a road tunnel	1.1 Summarise the legislation governing the tunnels in their organisation's area including permanent and temporary restrictions 1.2 Summarise the risk associated with incidents that may occur within or on the immediate approach to a tunnel 1.3 Identify the response to the different types of incident 1.4 Explain the principles of minimum safe operating procedures 1.5 Describe the difference between responses to similar incidents on the open road and within a tunnel 1.6 Describe the use of resources available for dealing with emergencies 1.7 Describe the roles and responsibilities of other organisations involved
2 Understand the risks and hazards associated with the use of systems and equipment within a tunnel or on the immediate approach road to the tunnel during emergencies	2.1 Explain each system and its use during various types of emergency 2.2 Identify the particular risks associated with each system and its use in an emergency 2.3 Summarise the escalation process including key organisations/people and the trigger points at which situations need to be escalated 2.4 Evaluate the information and the support requirements of different groups of road users
3 Be able to respond to incidents or events that may escalate to a significant incident unless properly managed	3.1 Monitor and evaluate the situation developing within and on the approaches to road tunnels 3.2 Apply the escalation procedures which apply to incidents within a tunnel or approach road 3.3 Monitor and evaluate the risks associated with evacuation points in road tunnel emergencies 3.4 Assess alternative actions in a variety of emergency situations

Learning Outcome - The learner will:	Assessment Criterion - The learner can:
	3.5 Identify and deploy resources needed for dealing with emergencies
	3.6 Use signage and communications systems during operational events and incidents to support the needs of road users
	3.7 Instigate road tunnel evacuation procedures
4 Be able to return to normal operations at the end of an emergency	4.1 Evaluate the options for return to normal operations
	4.2 Conclude an emergency situation in accordance with procedures
	4.3 Implement processes to ensure all systems and resources are returned to their pre-emergency state, including any replenishment necessary
	4.4 Record and communicate information about emergencies to relevant stakeholders

Assessment

There must be valid, authentic and sufficient for all the assessment criteria. However, one piece of evidence may be used to meet the requirements of more than one learning outcome or assessment criterion.

Unit H/504/6763
Managing Fire, Flood, Chemical, Biological, Radiological, Nuclear or Explosive Events in Road Tunnels

This unit is intended for both control room and on-road staff. It aims to provide the candidate with a detailed understanding of the operational management of serious road or tunnel incidents involving a Fire, Flood, Chemical, Biological, Radiological, Nuclear or Explosive (CBRNE) event.

Learning Outcome - The learner will:	Assessment Criterion - The learner can:
1 Understand the hazard (ADR) classification of road tunnels and the general nature of prohibited loads	1.1 Identify the hazard (ADR) classification for the road tunnel(s) in their organisation's area
	1.2 Describe the general types of loads that are prohibited
	1.3 Describe the general types of loads that are not prohibited
	1.4 Identify any road tunnel life safety engineering systems in use to identify such loads
	1.5 Identify and describe the procedures to be followed in the event that a prohibited vehicle is identified and using the road tunnel
2 Understand the dangers which can arise from vehicle fire, flood, chemical, biological, radiological, nuclear or explosive incidents in road and road tunnel situations	2.1 Describe the dangers which arise from a vehicle fire on the open road
	2.2 Describe the dangers which arise from a vehicle fire in a road tunnel
	2.3 Describe the dangers which arise from a flood on the open road
	2.4 Describe the dangers which arise from a flood in a road tunnel
	2.5 Describe the dangers which arise from a chemical incident on the open road
	2.6 Describe the dangers which arise from a chemical incident in a road tunnel
	2.7 Describe the dangers which arise from a biological incident on the open road
	2.8 Describe the dangers which arise from a biological incident in a road tunnel
	2.9 Describe the dangers which arise from a radiological incident on the open road
	2.10 Describe the dangers which arise from a radiological incident in a road tunnel
	2.11 Describe the dangers which arise from a nuclear incident on the open road

Learning Outcome - The learner will:	Assessment Criterion - The learner can:
	2.12 Describe the dangers which arise from a nuclear incident in a road tunnel
	2.13 Describe the dangers which arise from an explosive incident on the open road
	2.14 Describe the dangers which arise from an explosive incident in a road tunnel
3 Be able to identify the types of vehicle and dangerous goods which significantly increase the risk of travelling safety for other road and road tunnel users	3.1 Demonstrate how dangerous goods vehicles and dangerous loads are identified at their site
	3.2 Explain their site procedures for the management of dangerous goods
4 Be able to identify the road tunnel Life Safety Engineering Systems available to mitigate the effects of a fire, flood, chemical, biological, radiological, nuclear or explosive event and understand how they should be operated	4.1 Identify the road tunnel life safety engineering systems relevant to the management of fire, flood, chemical, biological, radiological, nuclear or explosive events
	4.2 Identify who is expected to use each of the road tunnel life safety engineering systems
	4.3 Describe how each of the road tunnel life safety engineering systems are expected to be used during such incidents
	4.4 Describe any limitations in the use of the road tunnel life safety engineering systems

Assessment

There must be valid, authentic and sufficient for all the assessment criteria. However, one piece of evidence may be used to meet the requirements of more than one learning outcome or assessment criterion.

Unit T/504/6749
Operating Road Tunnel Life Safety Engineering Systems – Tunnel Drainage

This unit is intended for both control room and on-road staff. It aims to provide the candidate with a detailed understanding of the Tunnel Drainage System (including sumps and diverter valves) and how it must be operated.

Learning Outcome - The learner will:	Assessment Criterion - The learner can:
1 Know and understand the operation of the road tunnel drainage systems	1.1 Describe the principal flow routes of the tunnel drainage system for all modes of operation (e.g. normal, tunnel washing, emergency etc.)
	1.2 Explain the tunnel drainage system in terms of the number of sumps, the main function of each, their capacities and normal pumping levels (e.g. minimum and maximum levels, etc.)
	1.3 Explain how the status of the pumping system is monitored and controlled
	1.4 Explain how the operational status of the pumping system is determined and the reporting lines and associated actions if a system failure is identified
2 Know and understand how, why and when road tunnel drainage systems are operated during normal conditions	2.1 Explain how the carriageway drainage system functions, where it drains to and any known limitations
	2.2 Explain and demonstrate how the drainage system normally operates (e.g. automatic pump operation etc.)
3 Know and understand how, why and when road tunnel drainage systems are operated during Emergency Conditions	3.1 Explain how the carriageway drainage system functions during emergencies, to where contaminated liquids should be diverted (if anywhere) and any known limitations (e.g. capacity of foul sumps etc.)
	3.2 Explain and (if operationally possible) demonstrate how the drainage system is operated during emergency conditions (e.g. manual pump operation, operation of diverter valves and the associated operational criteria etc.)
	3.3 Explain the specific procedures regarding the operation of the drainage system during an emergency

Assessment

There must be valid, authentic and sufficient for all the assessment criteria. However, one piece of evidence may be used to meet the requirements of more than one learning outcome or assessment criterion.

Learning Outcome 1

Including outflow (and cross flow) routes, sump capacities, pumping capabilities, sump instrumentation and starting / stopping cycle times and limitations.

Unit M/504/6751
Operating Road Tunnel Life Safety Engineering Systems – Active Fire Suppression

This unit is intended for both control room and on-road staff. It aims to provide the candidate with a detailed understanding of the Active Fire Suppression System (if installed) and how it must be operated.

Learning Outcome - The learner will:	Assessment Criterion - The learner can:
1 Know and understand the road tunnel Life Safety Engineering Systems which comprise the Active Fire Suppression Systems	1.1 Explain the purpose of active fire suppression systems and the main features of such systems 1.2 Explain the capacity, capabilities and limitations of the active fire suppression system at their workplace 1.3 Explain the timescales involved in starting and stopping the active fire suppression system 1.4 Explain the effect that operation of the active fire suppression system can have on other Life Safety Engineering Systems (e.g. filling of sumps, increased pumping, risk of minor flooding etc.) 1.5 Explain how the operational status of the active fire suppression system is determined and the reporting lines and associated actions if a system failure is identified
2 Know and understand how, why and when Active Fire Suppression Systems are operated during Emergency Conditions	2.1 Describe the conditions under which the active fire suppression system should be used 2.2 Explain how the active fire suppression system is activated and the procedures to be followed for the operation of the system during an emergency 2.3 Demonstrate how the active fire suppression system is operated
3 Know and understand the dangers associated with false activation of an Active Fire Suppression System during normal operation	3.1 Explain the effects on tunnel users of a false activation of the active fire suppression system 3.2 Explain the processes in place to ensure that a false activation does not occur 3.3 Explain the processes and procedures to be implemented if a false activation does occur
4 Know and understand the dangers associated with the failure to operate of an Active Fire Suppression System during a road tunnel fire incident	4.1 Explain the dangers associated with an active fire suppression system failure to activate during a tunnel fire incident 4.2 Explain the processes and procedures to be implemented if an active fire suppression system failure to activate does occur

Assessment

There must be valid, authentic and sufficient for all the assessment criteria. However, one piece of evidence may be used to meet the requirements of more than one learning outcome or assessment criterion.

Learning Outcome 1, Assessment Criteria 1.2
Including the system's capacity and capabilities, and starting / stopping / cycle times and limitations.

Learning Outcome 2, Assessment Criteria 2.2
For example, traffic stopped, confirmed fire, etc.

Unit L/504/6756
Liaise with the Media Regarding Operational Traffic Management

This unit is about liaising with the media regarding operational traffic management affecting the road network. It includes gathering and validating information, such as that relating to traffic flow and the management of incidents and communicating this to the relevant media in line with the candidate's level of authorisation and organisational procedures. It also includes monitoring the network and providing appropriate and accurate updates.

Learning Outcome - The learner will:	Assessment Criterion - The learner can:
1 Understand organisational procedures relating to liaison with the media	1.1 Describe their organisational procedures for liaising with the media
	1.2 Outline their organisation's chain of command for communication with the media
	1.3 Summarise the types of network management issues and terminology to be used when communicating with the media
	1.4 Explain the roles and responsibilities of their organisation's partners in communication with the media
	1.5 Explain the importance of ensuring that information communicated to the media is accurate and up-to-date
2 Know how to make best use of the media	2.1 Explain the importance of the media in providing information to road users
	2.2 Describe how different media types may be used effectively
	2.3 Explain the importance of timing and scheduling which affect the suitability of different media types
3 Be able to liaise with the media regarding operational traffic management issues	3.1 Gather and verify information relating to road network management issues for communication with the media
	3.2 Communicate accurate and up-to-date network management issues to the media in line with organisational procedures
	3.3 Liaise with partners involved in addressing incidents to agree information to be provided to the media
	3.4 Provide regular, accurate updates to the media on network management issues
	3.5 Review media reports reporting any inaccurate or inappropriate information in line with organisational procedures
	3.6 Maintain accurate and up-to-date records of all communications with the media

Assessment

There must be valid, authentic and sufficient for all the assessment criteria. However, one piece of evidence may be used to meet the requirements of more than one learning outcome or assessment criterion.

Unit R/504/6757
Respond to and Provide Support at Incidents on the Road Network

This unit is about responding correctly to incidents on the road network and taking the appropriate actions upon arrival at the scene, including the provision of support to the road-users involved. It includes agreeing the actions appropriate to addressing the incidents based on the information available, confirming the details upon arrival, assessing the risks and taking the relevant actions. This unit is intended primarily for non-emergency services responding to incidents. Maintaining the candidate's own health and safety and that of other road-users is of paramount importance.

Learning Outcome - The learner will:	Assessment Criterion - The learner can:
1 Understand the legal and organisational requirements when responding to and supporting incidents on the road network	1.1 Explain the legislation, policies and procedures in relation to responding to incidents on the road network
	1.2 Describe the importance of road incident scene investigations and the roles of those involved
	1.3 Explain the roles and responsibilities of their organisation's partner stakeholders in dealing with incidents, and the procedures for liaising with them
	1.4 Describe the factors to be considered in responding to an incident
	1.5 Explain the importance of maintaining accurate and up-to-date records and how to do this
2 Be able to respond to an incident on the road network	2.1 Assess the nature of the response required and take actions in line with procedures
	2.2 Identify changing road and traffic conditions associated with the incident and modify actions accordingly
	2.3 Drive vehicles safely and effectively, demonstrating the use of suitable warning devices in line with their organisation's procedures
3 Be able to attend and manage an incident on the road network	3.1 Position vehicles and use equipment effectively to ensure the health and safety of self and others
	3.2 Assess whether any injuries have been sustained and address these in line with organisational procedures
	3.3 Arrange the deployment of adequate resources to deal with the incident
	3.4 Ensure that decisions can be justified in line with organisational procedures
	3.5 Gather and record information clearly and accurately, sharing only relevant information in line with data protection and their organisation's procedures

Learning Outcome - The learner will:	Assessment Criterion - The learner can:
4 Be able to provide support to users on the road network	4.1 Assess the support needs of individual road users on the road network 4.2 Identify and agree a way forward which supports the needs of road users on the road network 4.3 Take action to support road users in line with organisational requirements

Assessment

There must be valid, authentic and sufficient for all the assessment criteria. However, one piece of evidence may be used to meet the requirements of more than one learning outcome or assessment criterion.

Unit Y/504/6758
Patrol Road Tunnels in Official Vehicles on the Road Network

This unit is about the key differences between patrolling on an open road and within tunnels. It highlights the particular risks associated with an enclosed environment, the approaches to a tunnel and ensures competence and awareness accordingly, and understanding the safety requirements for patrolling a tunnel.

Learning Outcome - The learner will:	Assessment Criterion - The learner can:
1 Know and understand the requirements for patrolling road tunnels and responding to incidents	1.1 Explain the fixed traffic management systems available within road tunnels in their organisation's area
	1.2 Explain the purpose and objectives of patrolling road tunnels
	1.3 Identify any specific restrictions, evacuation routes and points, and any environmental requirements associated with the tunnels in their organisation's area
	1.4 Evaluate the difficulties caused by operating within a road tunnel and describe the actions which minimise them
	1.5 Compare the differences in their own driving behaviour when operating on the approaches to, or in, a road tunnel compared to driving on the open road
	1.6 Describe the key hazards and risks associated with vehicle and non-vehicle related incidents in a road tunnel
	1.7 Describe the on-road response procedures for dealing with incidents in, or on, the approaches to road tunnels, including fires, hazardous materials and spillages
2 Be able to carry out patrol operations in official vehicles	2.1 Manoeuvre an official vehicle in a manner designed to achieve effective and safe traffic flow amongst other road users
	2.2 Apply traffic management measures to suit the needs of planned and unplanned incidents
	2.3 Carry out evacuations from road tunnels in accordance with organisational procedures

Assessment

There must be valid, authentic and sufficient for all the assessment criteria. However, one piece of evidence may be used to meet the requirements of more than one learning outcome or assessment criterion.

Unit D/504/6759
Escort Vehicles to a Place of Safety on the Road Network

This unit is about escorting vehicles, which may be to a location off the high speed road network. It includes route planning, controlling and positioning the candidate's vehicle safely and correctly at all times, and taking appropriate actions at junctions and intersections.

Learning Outcome - The learner will:	Assessment Criterion - The learner can:
1 Know and understand the relevant legislation, policies and procedures for escorting vehicles on the road network	1.1 Explain the legislation, policies and procedures for escorting vehicles on the road network
	1.2 Explain the importance of continually assessing the safety of self and others at all times during the escort
2 Be able to plan the route and confirm their own role in escorting vehicles to safety	2.1 Plan their own role and route when escorting vehicles to safety, taking into account road and weather conditions, traffic flow and behaviour and all other relevant considerations
	2.2 Specify the types of equipment required for escorting a vehicle
3 Be able to escort vehicles safely	3.1 Drive vehicles safely, taking appropriate action at junctions, traffic lights and roundabouts
	3.2 Deal with hazards and risks when escorting vehicles and take appropriate action
	3.3 Complete the relevant documentation relating to escorting vehicles

Assessment

There must be valid, authentic and sufficient for all the assessment criteria. However, one piece of evidence may be used to meet the requirements of more than one learning outcome or assessment criterion.

Unit R/504/6760
Remove Vehicles and Obstructions from the Road Network

This unit is about the safe and legal removal of vehicles and obstructions from the network. The candidate's consideration of their own health and safety and that of others is vital, and the candidate's understanding of their legal powers with regards to removal is important.

Learning Outcome - The learner will:	Assessment Criterion - The learner can:
1 Know and understand the legal and organisational requirements relating to the removal of vehicles and obstructions from the road network	1.1 Explain the legislation, policies and procedures relating to the removal of vehicles and obstructions from the road network
	1.2 Describe the different methods of removal and how to implement them
	1.3 Describe their organisation's partner stakeholders and service providers' principal roles and responsibilities in dealing with the removal of vehicle and obstructions from the road network
2 Be able to identify and implement the safest method for removing vehicles and obstacles from the road network	2.1 Assess the risks involved with the vehicle or obstruction and determine the safety method for clearing the carriageway
	2.2 Remove the vehicle or obstruction to a suitable location taking into account the health and safety of self and other road users
	2.3 Use statutory powers to remove vehicles and loads from the road network
3 Be able to use vehicles and equipment correctly to implement the removal of vehicles and obstructions from the road network	3.1 Use their vehicle safely and legally when removing vehicles and obstructions
	3.2 Use equipment safely including ropes, cones, lights and signs

Assessment

There must be valid, authentic and sufficient for all the assessment criteria. However, one piece of evidence may be used to meet the requirements of more than one learning outcome or assessment criterion.

Unit Y/504/6761
Respond to Traffic Management Incidents – Bronze Command

This unit is about responding to incidents on the road network and identifying and establishing the role of Bronze Command. It also includes identifying any other resources of facilities required to deal with the incident and working with other responders. The unit is intended primarily for non-emergency services responding to incidents.

Learning Outcome - The learner will:	Assessment Criterion - The learner can:
1 Understand the legal and organisational requirements of taking the role of Bronze Command at incidents on the road network	1.1 Explain the legislation, policies and procedures in relation to health, safety and welfare when taking the role of Bronze Command at incidents on the road network
	1.2 Explain their role and responsibilities when acting as Bronze Command and the purpose of Bronze Command
	1.3 Explain the types of facilities which may be required to meet the needs of individuals affected by the incident
	1.4 Explain the correct procedures for handing over responsibilities to other agencies
2 Be able to manage an incident on the road network in the role of Bronze Command	2.1 Work in co-operation and communicate effectively with colleagues and other responders
	2.2 Confirm the availability and location of relevant services and facilities, communicating any constraints to relevant persons, or find suitable alternative services and facilities
	2.3 Identify any resources required and deploy them to meet the demands of the response
	2.4 Monitor the health, safety and welfare of individuals within their area of responsibility
	2.5 Brief and debrief any individuals within their area of authority
	2.6 Make and apply decisions based upon dynamic risk assessments
	2.7 Identify when the incident requires a Silver response

Assessment

There must be valid, authentic and sufficient for all the assessment criteria. However, one piece of evidence may be used to meet the requirements of more than one learning outcome or assessment criterion.

Unit D/504/6762
Preparing for the Coaching Role

This unit aims to develop an understanding of the role and responsibilities of the coach and techniques to establish and maintain effective coaching relationships.

Learning Outcome - The learner will:	Assessment Criterion - The learner can:
1 Understand their own role and responsibilities in relation to coaching	1.1 Identify and describe the role and responsibilities of the coach, indicating the boundaries of the role
	1.2 Identify and explain the qualities and skills required in a coach
	1.3 Identify and describe resources and/or materials required for coaching
2 Understand ways to identify individual coaching needs	2.1 Identify and describe individual learning needs that can be met through coaching
	2.2 Identify and describe individual learning styles that need to be considered when coaching
3 Understand key techniques to establish and maintain an effective coaching relationship	3.1 Identify and explain styles of coaching to meet learner needs
	3.2 Explain the importance of and demonstrate a code of conduct, ground rules and confidentiality in a coaching relationship
	3.3 Explain and demonstrate ways of assisting coachees to clarify their goals and explore options to facilitate their achievement
	3.4 Explain and demonstrate how potential barriers to learning may be identified and overcome
	3.5 Describe and demonstrate ways of building rapport with individuals in coaching sessions
	3.6 Describe and demonstrate ways of creating an environment in which effective coaching can take place
4 Understand how to review progress	4.1 Describe how to review the coachee's progress, identifying action required
	4.2 Explain and use good practice in providing feedback to learners on their progress
	4.3 Identify opportunities in the organisation to use learning received through coaching
5 Understand how to evaluate the effectiveness of their own practice	5.1 Use reflective practice and feedback from others to review their own coaching role and identify areas for development

Assessment

There must be valid, authentic and sufficient for all the assessment criteria. However, one piece of evidence may be used to meet the requirements of more than one learning outcome or assessment criterion.

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