

Unit 20: Communication and Technology in the Uniformed Public Services

Unit code:	A/600/6098
QCF Level 3:	BTEC National
Credit value:	10
Guided learning hours:	60

● Aim and purpose

The aim of this unit is to develop learners' knowledge of the different forms of communication, including radio, and types of technology used in the uniformed public services. This unit will enable learners to use the different types of communication systems and develop their skills in the use of radio procedures.

● Unit introduction

This unit introduces learners to the equipment and skills used to communicate within the uniformed public services. The content of the unit will enable learners to develop and practise skills that will be of value in the context of uniformed public service work and further study.

The unit will include specific formalised written communication used in this specialist area of work. Learners will explore the different forms of communication transmission and radio communication and will practise using the techniques developed throughout the unit.

Learners will learn and practise using the phonetic alphabet, semaphore and Morse code. This will give them an understanding of covert or coded communication as well as a background to the more sophisticated encrypted communication used in the uniformed public services today.

Learners will explore the different types of technological systems used to improve the effectiveness of the uniformed public services. Learners will consider the different types of equipment used by the uniformed public services and the benefits gained through using this equipment.

● Learning outcomes

On completion of this unit a learner should:

- 1 Know types of formal written communication used in the public services
- 2 Be able to use the radio procedure of a uniformed public service
- 3 Be able to use different types of communication systems
- 4 Know the different types of technological systems used by the uniformed public services.

Unit content

1 Know types of formal written communication used in the public services

Formal written communications: letters; memos; reports, incident reports, annual reports, HM Inspection reports, audit reports; internet; intranet; email; other written communication, journals, prison service instructions (PSIs), prison service orders (PSOs), staff notices, standard operation procedures, brigade bulletins

2 Be able to use the radio procedure of a uniformed public service

Radios: eg Pye, Racal, Clansman, Bowman, Airwave, Personal Role Radio (PRR), Ptarmigan; Ultra-High Frequency (UHF), Very-High Frequency (VHF), High Frequency (HF)

Use of radio procedures in the uniformed public services: police, army, RAF, Royal Navy, HM Coastguard, HM Revenue & Customs

Radio communication: voice procedures; security; accuracy and discipline; prowords; call signs; code words; phonetic alphabet; authentication; net control; rebroadcast; radio users; pass simple messages; leaving and joining the net; test call; urgent messages; battle orders; weather forecasts

3 Be able to use different types of communication systems

Communication systems: reasons for use; origins of each type of communication; relevance to specific uniformed public services; practical use of different types of communication; object video; lingua net; microwave; Bluetooth™

Standard voice procedures: used in the uniformed public services eg army, police, ambulance

Satellite communications (SATCOM): video link; internet telephone; email; Morse code; wireless networking; mobile phone; internet; paging; semaphore

4 Know the different types of technological systems used by the uniformed public services

Equipment: electronic tagging, CCTV, passive Radio Frequency (RF) sensors, x-ray machines, geophone, satellite navigation, vehicle mounted data systems, thermal imaging cameras, automatic distress signal unit, roaming network mobile phone, simulators, fax machine, handheld metal detectors, nuclear quadruple resonances sensors, man-portable surveillance and target acquisition radar (MSTAR), Intelligence, Surveillance, Target Acquisition and Reconnaissance (ISTAR) equipment

Importance of using different types of technological systems: effective communication; rapid response; collaboration between services; advantages and disadvantages; inter-agency communication eg firelink project

Use of technological systems in the uniformed public services: police, ambulance, fire, army, navy, RAF, coastguard

Assessment and grading criteria

In order to pass this unit, the evidence that the learner presents for assessment needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria for a pass grade describe the level of achievement required to pass this unit.

Assessment and grading criteria		
To achieve a pass grade the evidence must show that the learner is able to:	To achieve a merit grade the evidence must show that, in addition to the pass criteria, the learner is able to:	To achieve a distinction grade the evidence must show that, in addition to the pass and merit criteria, the learner is able to:
P1 describe different types of formal written communication used in the uniformed public services		
P2 send a message by radio using standard voice procedures from one uniformed public service	M1 compare different types of radio communication systems	
P3 send a message using different forms of communication	M2 analyse the advantages and disadvantages of different communication systems	
P4 describe different types of technological equipment used by a selected uniformed public service. [IE]	M3 explain in detail the benefits of using technological equipment in a selected uniformed public service.	D1 evaluate the importance of using communication and technological equipment in the daily operation of uniformed public services.

PLTS: This summary references where applicable, in the square brackets, the elements of the personal, learning and thinking skills applicable in the pass criteria. It identifies opportunities for learners to demonstrate effective application of the referenced elements of the skills.

Key	IE – independent enquirers CT – creative thinkers	RL – reflective learners TW – team workers	SM – self-managers EP – effective participators
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Essential guidance for tutors

Delivery

This unit should be practically based and should encourage personal research and contact with various uniformed public services. This can be done through visits or visiting speakers from appropriate organisations. Tutors should enable learners to practise and develop appropriate skills.

Ideally, staff should have some understanding or background in communications in at least one of the uniformed public services but, if not, they can contact any of these services (for example fire service control room, police service headquarters control room, army communications system or ambulance service) for input.

Learners need to understand the various methods that public service organisations use to communicate with both their employees and their customers, for example intranet, staff information notices, memoranda, official orders such as prison service instructions or prison service orders. Most public services show the links to their formal communications on their website.

Learners need to gain an understanding of the layout of formal letters or reports used within the uniformed public services. Authentic paperwork to support this activity would be useful.

Many types of radio communication systems are used throughout the public services. It may benefit learners to visit a control room or to observe radios in operation at a local territorial army (TA) centre.

Learners are required to use radio and voice procedure to send and receive messages. The tutor should explain radio and voice procedures used by the uniformed public services.

Tutors could arrange a visit to any public service so that learners can see the different types of equipment in use and maybe use it themselves. Most fire stations are accommodating when it comes to showing members of the public the new technology being used for life-saving purposes.

Videos from the Royal Corps of Signals and the Royal Air Force may help to support the delivery of this unit.

Outline learning plan

The outline learning plan has been included in this unit as guidance and can be used in conjunction with the programme of suggested assignments.

The outline learning plan demonstrates one way in planning the delivery and assessment of this unit.

Topic and suggested assignments/activities and/assessment
Introduction to unit and outline of assessment.
Formal written communication – theory and reasons for use.
Formal written communication – practice worksheets.
Assignment 1: Formal Written Communication (P1)
Tutor introduces the assignment brief.
Theory input. Demonstration of the different types of radio.
Voice procedures.
Phonetic alphabet and sending of messages.
Guest speakers use of technological systems in the uniformed public services
Other communication systems – theory.

Topic and suggested assignments/activities and/assessment
Other communication systems – practicals.
Assignment 2: Sending my Messages (P2, P3, M1, M2)
Tutor introduces the assignment brief.
Technology in the uniformed public services.
Guest speakers/visits.
Types of technology.
Importance of technology – theory.
Demonstration of different types of technological systems.
Visit to technological communication company/organisations.
Assignment 3: Technology in the Uniformed Public Services (P4, M3, D1)
Tutor introduces the assignment brief.
Review of unit and assessment.

Assessment

This unit balances research and theory to allow the application of knowledge gained to a series of linked learning activities. The research undertaken and the outcomes from the activities are the most likely sources of evidence for this unit alongside the practical assessments.

Evidence may be in the form of research documentation, formal reports, oral presentation, observed discussions, appropriate role play or a series of practical exercises.

To achieve P1, learners must describe the main characteristics of the different forms of formal written communication used in the uniformed public services as indicated in the unit content.

For P2, learners should use theory and any expertise accessed to proficiently send a message using a radio communication system. They should do the same, if appropriate, for P3 using a different type of communication system.

M1 and M2 follow on from P2 and P3. The learner needs to compare the operating details (not in great depth) of each communication system, analysing their advantages and disadvantages.

For P4, learners are required to describe the different types of technological equipment used by the uniformed public service and any limitations associated with them.

M3 follows on from P4. Learners have to explain the benefits of using technology, giving some examples of how it is used and at what cost within a uniformed public service.

D1 follows on from M1, M2 and M3. Learners need to evaluate the information they have provided about the importance and benefits of using communication and technological equipment in the day-to-day operation of the uniformed public services.

Programme of suggested assignments

The table below shows a programme of suggested assignments that cover the pass, merit and distinction criteria in the assessment and grading grid. This is for guidance and it is recommended that centres either write their own assignments or adapt any Edexcel assignments to meet local needs and resources.

Criteria covered	Assignment title	Scenario	Assessment method
P1	Formal Written Communication	As a training officer, track how new recruits may send and receive formal communication within a uniformed public service.	Booklet with relevant examples.
P2, P3, M1, M2	Sending my Messages	As unit leader within your college course you are required to send and receive messages to inform your decisions about the course operation.	Practical with follow-up report.
P4, M3, D1	Technology in the Uniformed Public Services	Having visited uniformed public services and observed their technology in use, report back to your unit leader.	Report on visits.

Links to National Occupational Standards, other BTEC units, other BTEC qualifications and other relevant units and qualifications

This unit forms part of the BTEC Public Services sector suite. This unit has particular links with the following unit titles in the Public Services suite:

Level 1	Level 2	Level 3
Map Reading using Ordnance Survey Maps	Adventurous Activities and Teamwork for the Public Services	Outdoor and Adventurous Expeditions
Introduction to Expedition Skills	Land Navigation by Map and Compass	Skills for Land-based Outdoor and Adventurous Activities
	Expedition Skills in Public Services	

Essential resources

Access to public service organisations is essential for this unit.

Access to technological and communication system used and related information from the appropriate public services should also be provided.

Indicative reading for learners

Journals

Amateur Radio

Practical Wireless

Websites

British Army	www.army.mod.uk
Metropolitan Police	www.met.police.uk
The Royal Signals	www.armedforces.co.uk/army/listings/0085.htm
Royal Navy	www.royalnavy.mod.uk
Royal Air Force	www.raf.mod.uk

Delivery of personal, learning and thinking skills

The table below identifies the opportunities to for personal, learning and thinking skills (PLTS) that have been included within the pass assessment criteria of this unit.

Skill	When learners are ...
Independent enquirers	describing different types of technological equipments.

Although PLTS opportunities are identified within this unit as an inherent part of the assessment criteria, there are further opportunities to develop a range of PLTS through various approaches to teaching and learning.

Skill	When learners are ...
Independent enquirers	planning and researching the different communication types and technological systems analysing the advantages and disadvantages of these systems and evaluating their impact on the uniformed public services
Creative thinkers	considering their own and others' assumptions when discussing the technological systems in our society considering the impact of technological systems and their relevance to modern day society
Reflective learners	setting goals for unit achievement
Team workers	progressing discussion around the use of and relevance of technological systems
Self-managers	managing time and resources of a larger project for the distinction criterion researching and producing relevant reports
Effective participators	discussing the issues of invasion of privacy and restrictions of freedom which some of the technological systems used by the uniformed public services could impose on individuals.

● Functional Skills – Level 2

Skill	When learners are ...
ICT – Develop, present and communicate information	
Enter, develop and format information independently to suit its meaning and purpose including: <ul style="list-style-type: none"> • text and tables • images • numbers • records 	producing a formal communication booklet producing a communication and technology report
Bring together information to suit content and purpose	producing a formal communication booklet producing a communication and technology report
Present information in ways that are fit for purpose and audience	producing a formal communication booklet producing a communication and technology report
English	
Reading – compare, select, read and understand texts and use them to gather information, ideas, arguments and opinions	producing a communication and technology report
Writing – write documents, including extended writing pieces, communicating information, ideas and opinions, effectively and persuasively	producing a formal communication booklet
English	
Reading – compare, select, read and understand texts and use them to gather information, ideas, arguments and opinions	producing a communication and technology report
Writing – write documents, including extended writing pieces, communicating information, ideas and opinions, effectively and persuasively	producing a formal communication booklet.