

# Unit 27: Airfield Operations

**Unit code:** Y/602/5693

**QCF Level 3:** BTEC National

**Credit value:** 7

**Guided learning hours:** 56

## ● Aim and purpose

The aim of this unit is for learners to gain understanding of the importance of providing effective airfield operations and maintenance in the aviation industry. They will develop knowledge and understanding to ensure aircraft operate safely and airfield facilities are available.

## ● Unit introduction

This unit gives learners the opportunity to explore the framework in which aviation organisations operate, and the role of the various organisations involved in terms of meeting the standards of aircraft and airfield performance, which are vital for the safety of the aircraft, passengers, ground crew and flight crew during ground operations, from landing to take-off.

The unit investigates the training and development programmes for staff, identifying how systems are used to monitor and improve skill levels. Learners will be introduced to the requirements for tactical planning and monitoring of airport activities and functions explaining how, in most cases, all facilities are in place when aircraft arrive at the gate and so turnround can take place efficiently.

Aviation is a fast-moving industry, so rapid and accurate communication is key to an efficient operation. Learners will discover the types of information that both flight and ground crew require, how it is communicated and how it is used.

An airfield contains many facilities that must function at all times to ensure safe landing, take-off and turnround activities. The inspection and reporting regimes that take place on a daily basis at major airports will be explored. Learners will also investigate the legal requirements that apply to airfield operations, sourcing documents such as Civil Aviation Authority Publications (CAPs) and learn to extract the required information.

Finally, learners will gain an understanding of how airport contingency plans are developed and implemented, identifying procedures for coping with emergencies and reducing hazards.

## ● Learning outcomes

**On completion of this unit a learner should:**

- 1 Understand how to meet the training requirements of personnel operating within the airfield environment
- 2 Know the monitoring and planning requirements of airport activities
- 3 Understand the requirement to communicate airfield related information
- 4 Understand procedures for inspecting airfield facilities
- 5 Understand how airport contingency plans are developed and implemented.

# Unit content

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## 1 Understand how to meet the training requirements of personnel operating within the airfield environment

Training and development programmes:

- initial training programmes, e.g. corporate structure, uniform standards, company procedures
- mandatory training, e.g. fire, General Security Awareness Training (GSAT), National Aviation Security Programme (NASP), manual handling
- airside safety management, e.g. geography of stands, rules of parking, positioning and stowing of equipment, identifying and understanding of markings and lines on stands
- air-bridge driving
- procedures for approaching aircraft, e.g. anti-collision lights, engines off
- coordinating airfield training and development (regulatory requirements), e.g. Airside Safety Management (CAP642), Air Navigation Order 2005 (CAP393), Airside Safety Committee, Airside Work Permit
- airside safety performance and management

Systems in place for training and monitoring of staff:

- annual staff training, e.g. manual handling, air-bridge/jetty licence, dispatch, load planning and load control, fire training, Accounting and Authorisation of Hold Baggage for Carriage by Air (AAA), dangerous goods
- monitoring staff performance, e.g. annual competence checks, airline auditing of ground staff, safety and procedures (IATA Airport Handling Manual – AHM560), Department for Transport (DfT) checks, Health and Safety Executive (HSE) spot checks, monitoring of on-time aircraft departures, shadowing, target setting, mentoring

Training requirements for airside driving:

- qualifications, e.g. full UK driving licence, Airport Operators Association (AOA), local familiarisation, speed limits, airside driving permit, specialist vehicle licence, approaching aircraft, movement of vehicles on the manoeuvring area
- medical requirements, e.g. vision and hearing tests
- vehicle standards awareness, e.g. MOT standard, hazard beacon, free from foreign object debris (FOD), carrying company logo, airside permit

## 2 Know the monitoring and planning requirements of airport activities

Monitoring and planning requirements of aircraft arrival and departures:

- monitoring and planning requirements, e.g. slot allocations, IATA scheduling procedure guide, regular schedule services, programmed charter services, irregular services (ad hoc etc), general aviation, military operations, grandfather rights
- achieving slot times
- aircraft parking and ramp design, e.g. simple terminal, piers, air-bridges, satellites, multiple terminals with access links

- delays and cancellations

Monitoring requirements of aircraft parking:

- function of automatic parking guides, e.g. Burroughs Optical Lens Docking System (BOLDS), Azimuth Guidance for Nose-in Parking at Stands (AGNIS), side marker boards (SMB), Parallax Aircraft Parking Aids (PAPA), Aircraft Parking and Information System (APIS)
- stand readiness, e.g. clear of aircraft, vehicles, personnel, FOD, airbridge retracted, adequate size for planned aircraft

Manoeuvring operations within the airfield:

- aircraft movement, e.g. marshalling signals and procedures, speed of aircraft manoeuvre, radius of aircraft turn, tug, pushback, powerback, centreline guidance, stopping guidance

Requirements to control the movement of vehicles airside, for example:

- Airside Vehicle Permits (AVPs)
- Department for Transport Test Certificate
- control of vehicle movements
- regulations in place for taxiway crossing
- obstruction of lights
- manoeuvring areas
- driving permit rules (vehicles must not be driven across aircraft stands unless directly involved in the turnround operation of the aircraft using or about to use the stand)
- enforcement, e.g. Airside Safety Unit (ASU)
- penalties
- withdrawal of driving permit
- Civil Aviation Authority regulations (CAP642, CAP790)

### 3 Understand the requirement to communicate airfield related information

- reduction in airfield facilities, e.g. radar, taxiway closure, single runway operation, work in progress (WIP), changes in radio frequencies, instrument landing system (ILS), runway/taxiway lighting system, slot restrictions
- handling agent factors, e.g. lack of steps, lack of gate availability
- weather-related issues, e.g. fog, snow/ice on runway/taxiway

Information requirements of ground crew:

- arrival, e.g. estimated time of arrival (ETA), stand allocation, available route for service vehicles, availability of air-bridge
- turnround, e.g. procedures for refuelling while passengers onboard, acceptable route for disembarking/embarking passengers
- departure, e.g. pushback clearance, direction of push

How airfield operations information is communicated:

- choice of appropriate medium, e.g. radio, fixed line telephone, mobile telephone, text, fax, printed document
- radiotelephony (RT) procedures, e.g. use of phonetic alphabet, use of aeronautical terms, standard phraseology, acknowledgement and read-back of messages, frequencies and relevance
- Automatic Terminal Information System (ATIS)
- need for clarity
- requirement for a record of communication

#### 4 Understand procedures for inspecting airfield facilities

Runway surface inspection procedures:

- inspection regime, e.g. routine (daily/ twice-daily complete surface check), detailed (detailed inspection of limited area), management inspection, special (following up a report of a suspected problem)
- focus of inspection, e.g. surface (cracking, displaced, flooding, snow/ ice covered, FOD), edges (crumbling, drains blocked, damaged facilities), markings (centre line, touchdown markers, lead-off lines), work in progress (infringing runway safety areas), wildlife (especially birds)

Airfield lighting inspecting procedures:

- inspection regime, e.g. routine (prior to sunset, daily), special (following up a reported fault)
- focus of inspection, e.g. approach lighting systems, approach slope indicators, airfield beacon, runway centre line lights, runway edge lights, CAT3 stop lights, wig-wags, Visual Approach Slope Indicator (VASI), Precision Approach Path Indicator (PAPI)
- checks, e.g. functionality, brightness, clean lenses

Procedures for monitoring FOD:

- routine inspections
- prevention, e.g. FOD containers, training
- maintenance, e.g. sweeping, magnetic bars, rumble strips
- enforcement, e.g. identify source of FOD, ensure offenders clear up, fine repeat offenders
- typical FOD, e.g. pavement fragments, catering supplies, building materials, rocks, sand, pieces of luggage, wildlife and insects

Observing, documenting and reporting birds:

- designated staff
- routine patrols
- knowledge of bird habits
- observe regular patterns of movement
- record significant sightings
- identify types of bird
- share information with air traffic control (ATC)
- bird strikes reported to ATC and CAA (CAP772)

- records used to guide local prevention and dispersal planning

Importance of reporting deficiencies:

- airport, e.g. liability (landlord, responsible for major facilities, damage/injury to third party users – airlines/passengers), reputation, damage to business
- airline, e.g. liability (passenger safety, accident prevention), delays, costs
- staff, e.g. shared responsibility, job security

## 5 Understand how airport contingency plans are developed and implemented

Emergency planning procedures:

- the plan (Airport Emergency Orders, management of an emergency situation/incident, best use of available resources, coordination of activities, role of each agency, recovery of business with minimal disruption)
- procedures, e.g. levels of response readiness, chain of command (gold, silver, bronze command), communications, coordination
- agencies involved, e.g. rescue and fire fighting service (RFFS), police, ambulance, social services
- zoning, e.g. access for agencies involved, establishment of incident control point
- bomb threat/terrorism threat (colour coding of threat level)
- coordination between different operational areas
- testing, e.g. table-top exercise, live exercise
- updating

Types of emergencies:

- aircraft accident
- aircraft ground incident
- full emergency
- local standby
- bomb threat

Requirements for testing airport emergency plans:

- legal, e.g. maintenance of airport licence (Air Navigation Order (ANO) 2009)
- ethical, e.g. save lives, provide safe and secure environment, minimise damage
- financial, e.g. reduce airport and airline disruption, reduce consequential costs, return airport to full operations as soon as possible
- practical, e.g. requirements for airport RFFS personnel (response time, familiarisation with equipment, operating in a 'live' environment), coordination of Airport Emergency Plans with local/regional disaster plans, test existing procedures (using simulated fatalities, injuries and treatment), familiarise all agencies with requirements of Air Accidents Investigation Branch (AAIB)

Removing hazards within the airfield:

- runway, taxiway and apron maintenance, e.g. regular checks by airport operations, reporting of FOD by pilots and air traffic control, personal responsibility to remove FOD
- adverse weather hazards, e.g. ice and snow clearing equipment used to improve traction on the landing strip, de-icing fluids sprayed on surfaces of departing aircraft
- bird strike hazard, e.g. dispersal (broadcast of bird distress signals, firing of pyrotechnic bird scaring cartridges), habitat management, appropriate grass management policies

## 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:
<b>P1</b> Explain how training and development programmes are coordinated	<b>M1</b> Explain the importance of training and development programmes	<b>D1</b> Examine the causes of an aircraft ground incident and an aircraft accident, making recommendations of how airfield operations training and procedures might be improved
<b>P2</b> Describe systems used to monitor and improve staff training		
<b>P3</b> Explain the training requirements for personnel driving within the airfield environment [IE]		
<b>P4</b> Describe the monitoring and planning requirements of aircraft arrivals and departures		
<b>P5</b> Describe the monitoring requirements of aircraft parking	<b>M2</b> Compare the monitoring, planning, communication and inspection requirements of a major airport with those for a general aviation airfield	
<b>P6</b> Describe the requirements to control the movement of vehicles within the airfield environment		
<b>P7</b> Describe the information requirements of flight crew		
<b>P8</b> Describe the information requirements of ground crew		
<b>P9</b> Explain how information regarding airfield operations is communicated		
<b>P10</b> Describe the procedures for inspecting runway surfaces		
<b>P11</b> Describe the procedures for inspecting airfield lighting		

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:	
<b>P12</b> Describe the procedures for monitoring Foreign Object Debris (FOD) within the airfield			
<b>P13</b> Describe the procedures for observing, documenting and reporting birds and other wildlife			
<b>P14</b> Explain the importance of reporting any deficiencies found during inspections [EP]			
<b>P15</b> Describe airport emergency planning procedures			<b>M3</b> Explain methods adopted by an airport to prepare for different airport emergencies
<b>P16</b> Describe different types of airport emergencies			
<b>P17</b> Describe requirements to test emergency plans			
<b>P18</b> Explain how to remove different types of hazards within the airfield			

**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.

<b>Key</b>	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

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## Delivery

For this unit it is recommended that learners have the opportunity to go airside and identify the different areas of airfield operations. It would be extremely useful for airport-based delivery to include visits onto the ramp where many of the elements of the unit can be seen in practice. For classroom-based learners, this access is unlikely at a major airport, but viewing decks and 'spotting points' still exist at some, so close observation may be possible. Equally, a visit to a small flying club can often be arranged – the aircraft may be smaller, but the principles are largely the same within airfield operations. Alternatively, visits to RAF stations, which can often be arranged for colleges and other institutions as part of a career options programme, will give learners the opportunity to view at first hand many of the activities listed in the unit content and question RAF staff and civilian personnel.

Many learners may have had some exposure to aviation, and there is a growing amount of video/DVD information available. For example, some television channels give coverage of aviation-related subjects including airport operations and accident investigations. These can expand and consolidate learner knowledge, and may provide a combined delivery of several aspects of the unit's topics. Learners should be encouraged to access a variety of resources.

Legal requirements should be applied to realistic scenarios constructed through a series of tasks which relate to the operational tasks undertaken in the airport environment. If actual aviation examples can be sourced they can be adapted and used.

For learning outcome 1, learners would benefit from interviewing staff who work airside. They could research the different job roles within airfield operations, this could also be assessed by role play of staff development tasks. For learners to understand the training requirements of staff operating within the airfield environment and the importance and the effect on staff, they should research company procedures and training manuals, CAP642 – Airside Safety Management and the CAP393 – Air Navigation Order 2005, updated 2009.

For learning outcome 2, learners would benefit from visiting an airline operations department, however inviting guest speakers to the centre can serve equally well. It is important that learners realise the links between the theories being discussed, the practical procedures put into place, and the legal framework embracing what is arguably the most highly-regulated industry in the world. CAP642 provides a detailed description of the monitoring and planning requirements of aircraft arrivals and departures in terms of manoeuvring operations, slots, aircraft loading, pushback and airside safety management rules. In addition to CAP642, learners should be guided to CAP790 – Airside Driving and Vehicle Operation to understand the regulations in place for controlling the movement of vehicles within the airfield environment.

Learning outcome 3 lends itself to role play, with opportunities for simulated radio communication and control of ramp activities. This can highlight the importance of accurate and effective communication, and the possible disastrous effect of errors. Learners who have the opportunity to go airside may obtain witness statements and peer statements to meet some of the assessment criteria. Learners are required to describe the airfield-related information requirements of flight crew and ground crew and they must cover all the items listed in the unit content.

For learning outcome 4, learners must examine the procedures in place for inspecting runway surfaces, lighting and monitoring Foreign Object Debris (FOD) within the airfield. They also need to explain the importance of reporting any deficiencies found during inspections. Learners may wish to refer to the Concorde 2000 disaster, caused by FOD on the runway, to support explanations. Learners need to describe the procedures for observing, documenting and reporting birds and other wildlife within the airfield. Learners should investigate the procedures in place for grass lengths, noise deterrents, vegetation etc. There are also many good YouTube clips online that can help with delivery. The merit criterion brings together learning

outcome 2, 3 and 4 by asking learners to contrast the requirements of a major airport and a general aviation airfield. Learners should recognise that, in essence, the rules and procedures are much the same. It is just the range and scale of operations and equipment that are different and, as a consequence, the activities and staff at major airports are broken down into specialist areas.

For learning outcome 5, case studies on aircraft disasters can be used. Case studies where all areas of the disaster are researched, including aircraft design, reason for the disaster and who and what was involved, should be identified. Learners will need to refer to CAP168 – Licensing of Aerodromes, Chapter 8 and CAP576 – Aerodrome Model Emergency Orders (reference to zoning). The merit criterion asks learners to explain methods adopted by an airport to prepare for airport emergencies; this development from the pass criteria allows learners to consider specific examples of good practice. In delivery, learners may benefit from working in small groups to devise a desktop emergency exercise that will test the preparedness of airport operations staff. Learners could either undertake a desktop exercise or write one; this would involve a regular series of briefing notes for staff covering the first two hours of a major accident. Tutors should set the scenario and leave learners to consider how the drama unfolds. The scenario could be based on a real-life accident or fictitious accident.

Teamwork should also be considered within this unit. Learners should understand the importance of meeting operational needs with all employees working together to achieve the common goal of operating safely, efficiently and effectively. When covering airport contingency plans, learners may wish to identify how to manage an emergency situation/incident, best use of available resources, coordination of activities and the role of each agency involved. Learners should refer to CAP168 –Licensing of Aerodromes (Chapter 9 – Emergency Planning, Appendix 9A – Emergency Planning Committee Formation, Appendix 9B – Notes for Guidance in Making Emergency Plans) and describe airport emergency planning procedures.

The distinction criterion requires learners to examine all five learning outcomes and suggest improvements to training and procedures based on their examination of a aircraft ground incident and an aircraft accident. The incidents must be real and involve a range of different causes.

## 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 of planning the delivery and assessment of this unit.

Topic and suggested assignments/activities and/assessment
Introduction and overview of the unit and the five learning outcomes.
A review of the unit assessment methods, along with timescales and hand-out and hand-in dates.
Tutor input and research on the training requirements of airfield staff.
Guest speaker on airfield operations/training, e.g. airport or airline human resources or airport safety.
Discussion on airfield training and the format of training programmes.
<b>Preparation for assignment</b>
<b>Assignment 1: Airfield Operations Manual – Training (P1, P2, P3, M1)</b>
<b>Feedback on assignment</b>
Visit to an airport, airfield or RAF station.
Tutor input and research on monitoring and planning airport activities.
Research and practical exercises (role play) on airfield communications.

Topic and suggested assignments/activities and/assessment
Guest speaker on airfield inspection, e.g. marshaller, bird and wildlife control officer.
Discussion and research on airfield inspection procedures.
Discussion on the differences in monitoring, planning, communication and inspection requirements of a major airport and a general aviation airfield.
<b>Preparation for assignment</b>
<b>Assignment 2: Airfield Operations Manual – Monitoring and Planning, Communications and Inspection Procedures</b> (P4, P5, P6, P7, P8, P9, P10, P11, P12, P13, P14, M2)
<b>Feedback on assignment</b>
Tutor input on airport contingency plans.
Investigating and presenting various accident case studies.
Guest speaker from the airport fire and rescue service.
Discussion and research into a desktop emergency exercise.
<b>Preparation for assignment</b>
<b>Assignment 3: Airfield Operations Manual – Contingency Plans</b> (P15, P16, P17, P18, M3)
<b>Feedback on assignment</b>
Discussion and research using case studies of aircraft ground incidents and aircraft accidents to consider improvements to the Airfield Operations Manual.
<b>Preparation for assignment</b>
<b>Assignment 4: Airfield Operations Manual Test</b> (D1)
<b>Feedback on assignment</b>
Review of the unit.

## Assessment

A variety of assessment methods could be used although it is envisaged that the evidence required to support this unit will primarily be assignments and presentations (group or individual learner).

### P1 – P2 – P3 – M1

To achieve P1, learners must explain how training and development programmes are coordinated. Learners should cover the different types of programme listed in the unit content. Learners are not required to describe each of the training programmes, but should focus on explaining how they are coordinated.

To achieve P2, learners must describe four systems that are in place for monitoring and improving staff training. Learners should support their evidence with aviation-related examples.

To achieve P3, learners must explain the training requirements for staff driving within the airfield environment. Evidence can be presented in written format covering all the items in the unit content, for example an information leaflet.

To achieve M1, learners should explain the importance of training and development plans drawing on those considered for P1 to P3. Learners should consider how training and development programmes affect staff operating in the airfield environment. Learners will need to show how training and development contributes to more effective staff operating within the airfield environment by equipping them with the skills, knowledge and understanding they need to carry out their roles safely and effectively.

#### **P4 – P5 – P6 – P7 – P8 – P9 – P10 – P11 – P12 – P13 – P14 – M2**

To achieve P4, learners are required to describe the monitoring and planning requirements of aircraft arrivals and departures in terms of manoeuvring operations, slots, aircraft loading, push back and airside safety management rules referring to CAP642.

To achieve P5, learners must describe the requirements of aircraft parking in terms of stand requirements and regulations, air-bridge, refuelling points, embarkation and disembarkation, loading of cargo and rules relating to cargo as stated in the unit content.

To achieve P6, learners are required to describe the requirements to control the movement of vehicles within the airfield environment and should refer to CAP642 and CAP790.

To achieve P7 and P8, learners will need to describe the airfield-related information requirements of flight crew and ground crew. Learners should cover the range listed in the unit content. They should support their evidence with examples.

To achieve P9, learners should explain how this information is communicated. It is recommended that assessment tasks for P7, P8 and P9 are integrated and assessed through role play.

To achieve P10 and P11, learners need to refer to CAA CAPs to describe the procedures in place for inspecting runway surfaces and inspecting airfield lighting. Learners can refer to the roles of airport operations and the procedures in place for carrying out runway checks.

To achieve P12, learners are required to describe the procedures for monitoring foreign object debris (FOD) within the airfield.

To achieve P13, learners need to describe the procedures for observing, documenting and reporting birds and other wildlife within the airfield.

To achieve P14, learners are requested to explain the importance of reporting any deficiencies found during inspections for both the airline and airport business. Learner responses should cover the range identified in the unit content.

To achieve M2, learners should apply information covered in P4 to P14, by comparing and contrasting the monitoring, planning, communication and inspection requirements of a major airport with those of a general aviation airfield. Learners are not expected to repeat what they have carried out to achieve the pass criteria; they need to identify and comment on the major differences.

#### **P15 – P16 – P17 – P18 – M3 – D1**

To achieve P15, learners must describe airport emergency planning procedures in place in the event of an emergency referring to CAA regulations.

To achieve P16, learners must describe different types of airport emergencies as listed in the unit content. Learners can use the case study examples they have researched as part of their evidence.

To achieve P17, learners must describe requirements to test emergency plans covering the range listed in the unit content.

To achieve P18, learners must explain how to remove different types of hazards within the airfield. Their explanation should cover the range of hazards detailed in the unit content.

To achieve M3, learners should bring together work from P15 to P18 to explain methods used by an airport to ensure that they are prepared for different airport emergencies. Learners should illustrate their explanations using examples of good practice and should cover a minimum of two emergency scenarios.

To achieve D1, learners must examine the causes of a real aircraft ground incident and a real aircraft accident. On completion of their investigation, learners need to suggest how airport operations training and procedures might be changed to prevent similar events occurring in the future or mitigate some of the effects. Evidence for this criterion could be based on comment and professional opinion from the aviation industry, or emergency services, which learners could reference and use to draw their own conclusions.

### 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, P2, P3, M1	Assignment 1: Airfield Operations Manual – Training	You have been employed by an airport to write an airfield operations manual to provide essential reference material for all staff and organisations involved in airfield operations. The first section of your manual is on training requirements and their importance.	Written assignment
P4, P5, P6, P7, P8, P9, P10, P11, P12, P13, P14, M2	Assignment 2: Airfield Operations Manual – Monitoring and Planning, Communications and Inspection Procedures	The second, third and fourth sections of your manual cover monitoring and planning, communications and inspection procedures.  As an appendix to these sections you have contrasted the monitoring, planning, communication and inspection requirements of your airport with a general aviation airfield.	Written assignment
P15, P16, P17, P18, M3	Assignment 3: Airfield Operations Manual – Contingency Plans	Your final section will cover contingency planning, explaining methods adopted by an airport to prepare for airport emergencies.	Written assignment

Criteria covered	Assignment title	Scenario	Assessment method
D1	Assignment 4: Airfield Operations Manual Test	As a test for your completed manual you will examine the causes of an aircraft ground incident and an aircraft accident and report on improvements that could be made to prevent similar events occurring or mitigate some of the effects.	Report

## Links to other BTEC units

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

Level 2	Level 3	Level 4
Unit 23: Aviation Communication Unit 30: Aircraft Marshalling	Unit 3: Security in the Aviation Industry Unit 19: Handling Air Passengers Unit 20: Ramp Handling Unit 26: Flight Operations Unit 28: Bird and Wildlife Control on Airports and Airfields Unit 32: Plan the Loading of Aircraft	n/a

## Essential resources

Learners must have access to library and research facilities, and current CAA publications.

## Employer engagement and vocational contexts

Industry visits and guest speakers are recommended. Learners should have access to accurate and up-to-date industry case studies.

## Indicative reading for learners

### Textbooks

Asford N et al – *Airport Operations, 3rd edition* (McGraw-Hill Professional, 2012) ISBN 978-0071775847

Graham A – *Managing Airports* (Elsevier, 2003) ISBN 978-0750686136

Horonjeff R, McKelvey F and Sproule B – *Planning and Design of Airports* (McGraw-Hill Publishing, 2006) ISBN 978-0071446419

## Journal

*Flight International* – Reed Business Publishing

## Websites

<a href="http://www.aci.aero">www.aci.aero</a>	Airports Council International
<a href="http://www.caa.co.uk">www.caa.co.uk</a>	Civil Aviation Authority
<a href="http://www.easa.europa.eu">www.easa.europa.eu</a>	European Aviation Safety Agency
<a href="http://www.iata.org">www.iata.org</a>	International Air Transport Association
<a href="http://www.icao.int">www.icao.int</a>	International Civil Aviation Organization

## Delivery of personal, learning and thinking skills

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

Skill	When learners are ...
<b>Independent enquirers</b>	investigating the training requirements for airside driving
<b>Effective participators</b>	discussing the importance of reporting any deficiencies found during inspections to airports, airlines and staff.

Although PLTS 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 ...
<b>Independent enquirers</b>	researching the training requirements for airfield personnel
<b>Creative thinkers</b>	applying legal requirements to realistic airfield scenarios
<b>Team workers</b>	simulating communication of airfield operations information through role-play
<b>Self-managers</b>	managing the workload of the unit assessment.



## ● Functional Skills — Level 2

Skill	When learners are ...
<b>ICT — Use ICT systems</b>	
Select, interact with and use ICT systems independently for a complex task to meet a variety of needs	using a variety of systems to conduct research and produce training manuals for employees
Use ICT to effectively plan work and evaluate the effectiveness of the ICT system they have used	planning and carrying out research using appropriate search criteria
Manage information storage to enable efficient retrieval	organising work into folders to enable retrieval and development
Follow and understand the need for safety and security practices	logging in to a variety of systems securely and visiting trusted websites
Troubleshoot	as required.
<b>ICT — Find and select information</b>	
Select and use a variety of sources of information independently for a complex task	using a range of internet sources to research the monitoring and planning requirements of aircraft arrivals, departures and parking
Access, search for, select and use ICT-based information and evaluate its fitness for purpose	using appropriate search criteria in order to locate airfield inspection procedures.
<b>ICT — Develop, present and communicate information</b>	
Enter, develop and format information independently to suit its meaning and purpose including: <ul style="list-style-type: none"> <li>• text and tables</li> <li>• images</li> <li>• numbers</li> <li>• records</li> </ul>	entering and developing images, diagrams and text to communicate airfield procedures through training manuals
Bring together information to suit content and purpose	collating notes and research findings on airfield procedures
Present information in ways that are fit for purpose and audience	clearly communicating airfield procedures through training manuals
Evaluate the selection and use of ICT tools and facilities used to present information	selecting the most appropriate ICT tools to produce training materials throughout the unit
Select and use ICT to communicate and exchange information safely, responsibly and effectively including storage of messages and contact lists	communicating airfield operations information following correct procedures.

Skill	When learners are ...
<b>English</b>	
Speaking and listening – make a range of contributions to discussions and make effective presentations in a wide range of contexts	working in groups to communicate airfield operations information
Reading – compare, select, read and understand texts and use them to gather information, ideas, arguments and opinions	reading and comparing procedures for inspecting designated areas of airfields
Writing – write documents, including extended writing pieces, communicating information, ideas and opinions, effectively and persuasively	writing training manuals to communicate procedures for airfield operations.