BTEC

Edexcel Level 3 BTEC Nationals in Aviation Operations

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Specification
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Ten principles for delivering an Edexcel Level 3 BTEC National qualification

This specification contains the rules and regulations, along with the units and associated guidance, to enable centres to design and deliver a programme of learning for the Edexcel Level 3 BTEC Nationals in Aviation Operations. The qualification structures set out the permitted combination of units learners need to complete the qualification. Each unit sets out the learning outcomes and grading criteria along with content, advice and guidance regarding appropriate delivery and assessment strategies. The following generic principles need to be adhered to so that a BTEC qualification is delivered to the appropriate standard.

1 The specification: The specification gives the information needed for the successful delivery and achievement of the units and the qualification as a whole. The specification is of importance to the learner and the tutor alike. Individual units can be delivered and studied in isolation but the learner and the deliverer should have access to the full information provided to support the programme of learning.

2 The website: Centres need to make regular use of the Edexcel website (www.edexcel.org.uk) to ensure that they have the most up-to-date information. In particular, the requirements for the external verification of the qualification receive regular updates, and appropriate information for centres is posted on the website. It is the responsibility of the centre to ensure that they are familiar with the latest BTEC NQF Level 2/3 (including Short Courses at Levels 1-3) Handbook and that they implement any related policy documentation which may have been posted on the website.

3 Policy: This specification gives details of our assessment and quality assurance procedures. It includes advice about our policy regarding access to our qualifications, the design of programmes of study and delivery modes. Centres must ensure that they follow the procedures and conform to the policies outlined.

4 Recruitment: Centres are required to recruit learners with integrity. A fundamental aspect of this integrity is that centres take appropriate steps to assess each applicant’s potential and make a professional judgement about the applicant’s ability to be able to successfully complete the programme of study and achieve the qualification. Centres should ensure that applicants have appropriate information and advice about the qualifications and that the qualification will meet their needs.
5 Assessment: Centres are required to use this specification to design and deliver a programme of learning that will enable learners to achieve the grading criteria stipulated in the unit grading grids. The programme of learning should consist of assignments which provide the opportunity for coverage of all grading criteria as set out in the grading grid for each unit. Assignments must be reliable and fit for purpose, giving learners every opportunity to generate evidence which satisfies the grading criteria. Centres should use a variety of assessment methods, including case studies, assignments and work-based assessments, along with projects, performance observation and time-constrained assessments where appropriate.

6 Assignments: Centres are encouraged to apply the grading criteria in a practical way. They should provide, wherever possible, a realistic scenario for learners to work with, and make maximum use of practical activities and work experience. The creation of assignments that are fit for purpose is vital to the learner’s achievement.

7 National Qualifications Framework (NQF): These qualifications have been accredited to the NQF and are eligible for public funding as determined by the DfES under Sections 96 and 97 of the Learning and Skills Act 2000. Details of the qualification units can be seen on the QCA OpenQuals database (www.openquals.org.uk).

8 Qualification Accreditation Numbers (QANs): The qualification titles feature in the funding lists published annually by the DfES and on the regularly updated website www.dfes.gov.uk/. The NQF QANs should be used by centres when they seek public funding for their learners. The QANs are listed in Annexe A.

9 Accreditation: This specification is accredited by the Qualifications and Curriculum Authority (QCA) until 31 August 2010 and for certification of learners until 31 August 2013. This specification may be updated during its period of accreditation and centres should refer to our website for the latest issue.

10 Approval: Centres that have not previously offered BTEC qualifications must apply for, and be granted, centre approval before they can apply for approval to offer the programme. When a centre applies for approval to offer a BTEC qualification they will be required to enter into an ‘approvals agreement’. The approvals agreement is a formal commitment by the head or principal of a centre to meet all the requirements of the specification and any linked codes or regulations.
What are BTEC Nationals?

BTEC Nationals are qualifications that are designed to provide specialist work-related qualifications in a range of sectors. They give learners the knowledge, understanding and skills that they need to prepare them for employment. The qualifications also provide career development opportunities for those already in work. Consequently they can provide a course of study for full-time or part-time learners in schools, colleges and training centres.

The family of BTEC Nationals includes Awards, Certificates and Diplomas which offer opportunities for nested provision and flexibility of delivery.

BTEC Nationals are designed to relate to the National Occupational Standards for the sector, where these are appropriate, and are supported by the relevant Standards Setting Body (SSB) or Sector Skills Council (SSC). Some BTEC Nationals form the Technical Certificate component of Apprenticeships and all attract UCAS points that equate to similar-sized general qualifications.

On successful completion of a BTEC National qualification, learners can progress into or within employment and/or continue their study in the same vocational area.

BTEC National Award

The 360 guided learning hours (GLH) (usually 6 units) BTEC National Award offers a specialist qualification that focuses on particular aspects of employment within the appropriate vocational sector. The BTEC National Award is a qualification which can extend a learner’s programme of study and provide vocational emphasis for learners following an Applied GCE or GCE route or a combination of both in their main programme of study. The BTEC National Award is especially suitable for more mature learners, who wish to follow a shorter programme of study directly related to their work experience or to an area of employment that they wish to move into.

BTEC National Certificate

The 720 GLH (usually 12 units) BTEC National Certificate provides a specialist work-related programme of study that covers the key knowledge and practical skills required in the appropriate vocational sector. The BTEC National Certificate offers flexibility and a choice of emphasis through the specialist units. It is broadly equivalent to two GCEs or the full award AVCE.

The qualification offers an engaging programme for those who are clear about the area of employment that they wish to enter. These learners may wish to extend their programme through the study of a related GCE, a complementary NVQ or another qualification. These learning programmes can be developed to allow learners to study complementary qualifications without duplication of content.

For adult learners the BTEC National Certificate can extend their experience of work. It is a suitable qualification for those wishing to change career or move into a particular area of employment following a career break.
BTEC National Diploma

The 1080 GLH (usually 18 units) BTEC National Diploma extends the specialist work-related focus available from the BTEC Certificate. There is potential for the qualification to prepare learners for employment in the appropriate vocational sector and is suitable for those who have decided that they wish to enter a particular area of work.

Some adult learners may wish to complete this qualification in order to enter a specialist area of employment or progress into higher education. Other learners may want to extend the specialism that they followed on the BTEC National Certificate programme.

Progression from the BTEC National Diploma could be into employment where learners might take professional body examinations or complete NVQs. Alternatively, learners could continue to degree or other higher-education programmes in the same vocational sector or in a related sector.

National Occupational Standards (NOS)

BTEC Nationals are designed to relate to the National Occupational Standards (NOS) in the appropriate vocational sector. NOS form the basis of National Vocational Qualifications (NVQs). BTEC Nationals do not purport to deliver occupational competence in the sector, which should be demonstrated in a work context. However, the qualifications provide much of the underpinning knowledge for the NOS, as well as developing practical skills in preparation for work.

Relevant aspects of the NOS are addressed in the learning outcomes and content of the units, and these links are identified where appropriate.

The Edexcel Level 3 BTEC Nationals in Aviation Operations relate to the following NOS:

- National Occupational Standards in Aviation (Aviation Operations on the Ground) at Level 3
- National Occupational Standards in Aviation (Cabin Crew) at Level 3
- National Occupational Standards in Aviation (Flight Deck Crew) at Level 3
- National Occupation Standards for Marketing at Level 3

This qualification is mapped to the NOS in that the content of the units is informed by the content of the NOS. However, there are no competency-based units in this qualification and therefore it should not be used as indication of learners’ competence in aviation-related occupations.
Key features of the BTEC Nationals in Aviation Operations

The BTEC Nationals in Aviation Operations have been developed in the aviation sector to focus on:

- education and training for aviation employees
- providing opportunities for aviation employees to achieve a nationally-recognised Level 3 vocationally-specific qualification
- giving learners the opportunity to gain a nationally-recognised vocationally-specific qualification to enter employment in the aviation sector or to progress to higher education vocational qualifications such as the Edexcel Level 5 BTEC Higher Nationals in Travel and Tourism Management
- giving learners the opportunity to develop a range of skills and techniques, personal skills and attitudes essential for successful performance in working life.

Rationale of the BTEC Nationals in Aviation Operations

These qualifications replace the previous BTEC Nationals in Airline and Airport Operations.

The aviation industry is growing at a rapid pace. The last ten years have seen a huge increase in the start up of new ‘budget’ airlines, an increase in routes offered by network carriers and scheduled airlines, and the establishment of charter airlines such as Thomsonfly which sell direct to the public. Along with these developments, the UK has seen a rapid expansion in the growth of regional airports, many of which now serve as hubs for low-cost and charter airlines. This rapid expansion has led to huge demand for a new, flexibly-skilled workforce.

Specific skills gaps identified in the emerging Sector Qualification Strategy (SQS) for the aviation industry include customer service skills, destination geography, awareness of security and team leadership skills. These BTEC Nationals address these shortage areas and have been structured to encourage the acquisition and development of these competencies prior to or whilst in employment in the aviation industry.

This specification is designed to provide an all-round introduction to the aviation industry for those who wish to further their careers in one of its many occupational areas. These include roles in airports such as passenger liaison, ramp work, cargo operations and ground handling, along with traditional airline jobs including cabin crew and customer service.

Some units in these qualifications cover topics not covered in the old BTEC Nationals in Airline and Airport Operations. They reflect the ever-increasing need for staff with diverse skills and the ability to handle a wide variety of situations. They include Unit 18: Team Leadership in the Aviation Industry, which allows learners to develop supervision and teamwork skills essential for a dynamic and ever-changing industry, and Unit 19: Conflict Management for Aviation, which focuses on the practical skills required to manage difficult situations on the ground and in the air.

The specification has been structured to allow learners maximum flexibility in selecting specialist units that reflect their own interests and career aspirations within aviation.
The BTEC National Award in Aviation Operations gives learners a sound foundation in the aviation industry, whilst also developing business and employability skills which are essential for gaining employment or securing career progression with a Level 3 qualification.

The BTEC National Certificate and Diploma in Aviation Operations have been designed to allow learners to select specialist units that reflect their career aspirations and the diverse nature of the industry. For example, those wishing to pursue a career in ramp handling could complete any of the following units, in addition to the core, for a National Certificate: Unit 5: Aircraft Operations, Unit 8: Handling Air Passengers, Unit 9: Air Cargo Operations, Unit 10: Airport Ramp Handling, Unit 11: Aircraft and Airfield Performance, Unit 12: Preparation for Working in the Aviation Industry, Unit 17: Airport Operations or Unit 18: Team Leadership in the Aviation Industry.

These qualifications are suitable for school leavers and adults, and have been designed to build on learning and achievement from Key Stage 4, or other Level 2 qualifications, for those that may wish to explore a vocational route at Level 3.

As the BTEC Nationals are ‘mode-free’, those already employed in the aviation industry may wish to study for the Award, Certificate or Diploma on a part-time basis, using their industry knowledge and expertise to develop evidence for the assessment criteria.

The assessment approach of the BTEC Nationals in Aviation Operations allows learners to receive feedback on their progress throughout the course as they provide evidence towards the grading criteria. Evidence for assessment can be generated through a range of diverse activities including role play and oral assessment. Delivery strategies should reflect the nature of employment within the aviation industry by encouraging learners to research and carry out assessment in the workplace or in simulated working conditions. Learners should take responsibility for their own learning and achievement, taking into account industry standards for behaviour and performance.
Structure of the qualification

Edexcel Level 3 BTEC National Award in Aviation Operations

The Edexcel Level 3 BTEC National Award in Aviation Operations consists of four core units plus two specialist units that provide for a combined total of 360 guided learning hours (GLH) for the completed qualification.

<table>
<thead>
<tr>
<th>Unit</th>
<th>Core units</th>
<th>GLH</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The Aviation Industry</td>
<td>60</td>
<td>3</td>
</tr>
<tr>
<td>2</td>
<td>Health, Safety and Security in the Aviation Industry</td>
<td>60</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>Meeting Customer Needs in the Aviation Industry</td>
<td>60</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>Air Travel Information</td>
<td>60</td>
<td>3</td>
</tr>
<tr>
<td>5</td>
<td>Aircraft Operations</td>
<td>60</td>
<td>3</td>
</tr>
<tr>
<td>6</td>
<td>Marketing the Aviation Industry</td>
<td>60</td>
<td>3</td>
</tr>
<tr>
<td>7</td>
<td>e-Business for Airlines</td>
<td>60</td>
<td>3</td>
</tr>
<tr>
<td>8</td>
<td>Handling Air Passengers</td>
<td>60</td>
<td>3</td>
</tr>
<tr>
<td>9</td>
<td>Air Cargo Operations</td>
<td>60</td>
<td>3</td>
</tr>
<tr>
<td>10</td>
<td>Airport Ramp Handling</td>
<td>60</td>
<td>3</td>
</tr>
<tr>
<td>11</td>
<td>Aircraft and Airfield Performance</td>
<td>60</td>
<td>3</td>
</tr>
<tr>
<td>12</td>
<td>Preparation for Working in the Aviation Industry</td>
<td>60</td>
<td>3</td>
</tr>
<tr>
<td>13</td>
<td>Airline and Airport Economics</td>
<td>60</td>
<td>3</td>
</tr>
<tr>
<td>14</td>
<td>Human Resources in the Aviation Industry</td>
<td>60</td>
<td>3</td>
</tr>
<tr>
<td>15</td>
<td>Airport Emergency Operations</td>
<td>60</td>
<td>3</td>
</tr>
<tr>
<td>16</td>
<td>Environmental Impacts of Aviation</td>
<td>60</td>
<td>3</td>
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<tr>
<td>17</td>
<td>Airport Operations</td>
<td>60</td>
<td>3</td>
</tr>
<tr>
<td>18</td>
<td>Team Leadership in the Aviation Industry</td>
<td>60</td>
<td>3</td>
</tr>
<tr>
<td>19</td>
<td>Conflict Management for Aviation</td>
<td>60</td>
<td>3</td>
</tr>
<tr>
<td>20</td>
<td>First Aid and Health for Aviation</td>
<td>60</td>
<td>3</td>
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</table>
Edexcel Level 3 BTEC National Certificate in Aviation Operations

The Edexcel Level 3 BTEC National Certificate in Aviation Operations consists of four core units plus eight specialist units that provide for a combined total of 720 guided learning hours (GLH) for the completed qualification.

<table>
<thead>
<tr>
<th>Unit</th>
<th>Core units</th>
<th>GLH</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The Aviation Industry</td>
<td>60</td>
<td>3</td>
</tr>
<tr>
<td>2</td>
<td>Health, Safety and Security in the Aviation Industry</td>
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<td>3</td>
<td>Meeting Customer Needs in the Aviation Industry</td>
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<td>Air Travel Information</td>
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<td>Aircraft Operations</td>
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<td>Marketing the Aviation Industry</td>
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<td>7</td>
<td>e-Business for Airlines</td>
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<td>Handling Air Passengers</td>
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<tr>
<td>9</td>
<td>Air Cargo Operations</td>
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<td>10</td>
<td>Airport Ramp Handling</td>
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<td>11</td>
<td>Aircraft and Airfield Performance</td>
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<tr>
<td>12</td>
<td>Preparation for Working in the Aviation Industry</td>
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<td>3</td>
</tr>
<tr>
<td>13</td>
<td>Airline and Airport Economics</td>
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<td>3</td>
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<td>14</td>
<td>Human Resources in the Aviation Industry</td>
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<td>15</td>
<td>Airport Emergency Operations</td>
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<tr>
<td>16</td>
<td>Environmental Impacts of Aviation</td>
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<tr>
<td>17</td>
<td>Airport Operations</td>
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<tr>
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<td>Team Leadership in the Aviation Industry</td>
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<td>19</td>
<td>Conflict Management for Aviation</td>
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<tr>
<td>20</td>
<td>First Aid and Health for Aviation</td>
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</table>
Edexcel Level 3 BTEC National Diploma in Aviation Operations

The Edexcel Level 3 BTEC National Diploma in Aviation Operations consists of four core units plus 14 specialist units that provide for a combined total of 1080 guided learning hours (GLH) for the completed qualification.

<table>
<thead>
<tr>
<th>Unit</th>
<th>Core units</th>
<th>GLH</th>
<th>Level</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>The Aviation Industry</td>
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<td>3</td>
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<td>Health, Safety and Security in the Aviation Industry</td>
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<td>Meeting Customer Needs in the Aviation Industry</td>
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<td>Air Travel Information</td>
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<table>
<thead>
<tr>
<th>Unit</th>
<th>Specialist units (choose 14 units)</th>
<th>GLH</th>
<th>Level</th>
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<tr>
<td>5</td>
<td>Aircraft Operations</td>
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<td>6</td>
<td>Marketing the Aviation Industry</td>
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<td>7</td>
<td>e-Business for Airlines</td>
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<td>First Aid and Health for Aviation</td>
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</table>
Unit format

All units in Edexcel Level 3 BTEC National qualifications have a standard format. The unit format is designed to give guidance on the requirements of the qualification for learners, tutors, assessors and those responsible for monitoring national standards.

Each unit has the following sections.

Unit title

The unit title is accredited by QCA and this form of words will appear on the learner’s Notification of Performance (NOP).

NQF level

This is the level of the unit within the National Qualifications Framework (NQF). The level of the unit has been informed by the NICATs level descriptors and, where appropriate, the NOS and/or other sector/professional benchmarks.

Guided learning hours (GLH)

In BTEC National qualifications each unit consists of 30, 60, 90 or 120 GLH. Guided learning hours are ‘a notional measure of the substance of a unit’. GLH include an estimate of time that might be allocated to direct teaching, instruction and assessment, together with other structured learning time such as directed assignments or supported individual study. It excludes learner-initiated private study. Centres are advised to consider this definition when planning the programme of study associated with this qualification.

Unit abstract

The unit abstract gives the reader an appreciation of the value of the unit in the vocational setting of the qualification as well as highlighting the focus of the unit. It gives the reader a snapshot of the aims of the unit and the key knowledge, skills and understanding developed while studying the unit. The unit abstract also highlights any links to the appropriate vocational sector by describing how the unit relates to that sector.

Learning outcomes

Learning outcomes state exactly what a learner should ‘know, understand or be able to do’ as a result of completing the unit.

Unit content

The unit content gives centres the substance to devise and plan the programme of learning needed for the learning outcomes to be successfully achieved. Evidence to meet the grading criteria will include relevant areas of the unit content as described in the assessment section of the unit. Where appropriate, this is informed by the underpinning knowledge and understanding requirements of the related National Occupational Standards (NOS).

The unit content sets out each learning outcome with prescribed key phrases or concepts listed in italics followed by the range of related topics. Detailed lists provide an indicative range to support the specific topic item. Not all of the unit content is expected to be assessed in every unit.
Grading grid

Each grading grid contains statements of the assessment criteria used to determine the evidence that each learner must produce in order to receive a pass, merit or distinction grade. It is important to note that the merit and distinction grading criteria refer to a qualitative improvement in the learner’s evidence, and not a quantitative one.

Essential guidance for tutors

This section is designed to give tutors additional guidance and amplification in order to provide understanding and a consistent level of delivery and assessment. It is divided into the following sections:

- **Delivery** — explains the content’s relationship with the learning outcomes and offers guidance about possible approaches to delivery. This section is based on the more usual delivery modes but is not intended to rule out alternative approaches.

- **Assessment** — gives amplification about the nature and type of evidence that learners need to produce in order to pass the unit or achieve the higher grades. This section should be read in conjunction with the grading criteria.

- **Links to National Occupational Standards, other BTEC units, other BTEC qualifications and other relevant units and qualifications** — sets out links with other units within the qualification. These links can be used to ensure that learners make connections between units, resulting in a coherent programme of learning. The links show opportunities for integration of learning, delivery and assessment.

- **Essential resources** — identifies any specialist resources needed to allow learners to generate the evidence required for each unit. The centre will be asked to ensure that any requirements are in place when it seeks approval from Edexcel to offer the qualification.

- **Indicative reading for learners** — provides a short list of learner resource material that benchmarks the level of study.

Key skills

This section identifies any opportunities in the unit for learners to generate evidence to meet the requirements of key skills units. Assessors should take care to become familiar with the key skills specifications and evidence requirements and not to rely solely on this section when presenting key skills evidence for moderation. Centres should refer to the QCA website (www.qca.org.uk) for the latest version of the key skills standards.
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Unit 1: The Aviation Industry

NQF Level 3: BTEC National
Guided learning hours: 60

Unit abstract

This unit is an invaluable and interesting starting point in learners’ study of the aviation industry, enabling them to develop an understanding of its structure, development and scale. This should paint a portrait of the industry from 1945 until the present day, in words, numbers and pictures, and give a vital insight into a dynamic, captivating and growing industry. The primary focus of the unit is the UK but, given the international nature of the industry, it is impossible to look at the UK in isolation; there are therefore many references to key international events, developments and organisations.

The unit sets the scene for study of the aviation industry by allowing learners to explore the framework in which aviation organisations operate, and the role of the various organisations involved. Learners will investigate the development of the industry in order to determine how it has changed over the years, including its major milestones and achievements. Many of these milestones have led to the development of organisations that regulate and/or facilitate the industry’s development, growth and success.

Finally, learners will examine the extent of the industry, and how all this activity contributes to the UK economy.

Learners undertake a significant amount of research in this unit, giving them valuable skills for further study.

Learning outcomes

On completion of this unit a learner should:

1. Know the structure of the UK aviation industry and the role of the organisations involved
2. Understand the development of the UK aviation industry since 1945
3. Understand the effect of economic regulation, deregulation and liberalisation on the UK aviation industry
4. Know the scale and impact of the aviation industry on the UK.
Unit content

1 **Know the structure of the UK aviation industry and the role of the organisations involved**

*Airport size, location and facilities:* major airports, eg London Heathrow (LHR); regional or feeder airports, eg East Midlands Airport (EMA); small airports, eg Blackpool Airport (BLK)

*Types of airline:* scheduled airlines; low-cost scheduled airlines; charter airlines; cargo airlines (scheduled, charter, integrated)

*Airline operating characteristics:* eg types of passengers, destinations, level of service, size

*Regulatory and trade bodies:* International Civil Aviation Organisation (ICAO); Joint Aviation Authorities (JAA); civil aviation directorates, eg Civil Aviation Authority (CAA); government bodies, eg HM Revenue and Customs, UK Immigration Service; airline organisations, eg British Air Transport Association (BATA), International Air Transport Association (IATA); airport organisations, eg Airports Council International (ACI); air traffic organisations, eg National Air Traffic Service (NATS), Eurocontrol; other organisations, eg health authorities, police

*General aviation (GA):* definitions and differences (airport, airfield, aerodrome); business aviation, eg air taxi, corporate operations; other, eg emergency services, pilot training, recreational

*Ancillary organisations:* aircraft manufacturers; airline service companies, eg in-flight catering, refuelling, cleaning; handling agents; duty-and tax-free shops; restaurants; duty-paid shops and concessionaires, eg NCP, WH Smith, Burger King; tour operators; travel agents; freight forwarders

2 **Understand the development of the UK aviation industry since 1945**

*Developments in airframe design and propulsion:* aircraft speed; aircraft size; significant commercial aircraft, eg DC3, B747, Concorde; trends in aircraft development

*Developments in airlines:* scheduled airlines, eg British European Airways (BEA) and British Overseas Airways Corporation (BOAC) to the modern British Airways (BA); charter; cargo; low-cost scheduled services

*Development of airports:* major airports; regional airports

*Development of key laws and regulations:* CAA publications, eg Air Navigation Order, Air Navigation Regulations; Aviation Security Acts; key international conventions and protocols, eg Warsaw, Chicago
Major factors affecting industry development: economic issues, eg investment in airlines and airports, recession; technological, eg crossing the Atlantic, pressurised cabins; political, eg trade, terrorism, bilateral agreements, privatisation; social, eg growth of tourism, changing needs of consumers, growth of disposable income; environmental, eg road congestion, noise pollution, terminal congestion

3 Understand the effect of economic regulation, deregulation and liberalisation on the UK aviation industry

Economic regulation: definition; relationship to safety regulation; bilateral agreements (content, freedoms of the air); role of key organisations (IATA, ICAO, CAA)

Deregulation: US (key steps, causes, legislation, impacts, long-term effects)

Liberalisation: EU (key steps, causes, legislation, impacts, long-term effects, future developments)

4 Know the scale and impact of the aviation industry on the UK

Contribution of aviation to the UK economy: Gross Domestic Product (GDP); investment; tax contribution; direct employment; indirect employment; growth rates

Passenger numbers: growth of UK airports (expansion, new airports, increase in flights, destinations served); airline growth (increased flight frequencies, new destinations, new airlines); trends, eg increased frequency of travel

Other key indicators: eg number of air transport movements, growth levels (25 year, airline type), load factors by individual airlines, cargo tonnes uplifted
In order to pass this unit, the evidence that the learner presents for assessment needs to demonstrate that they can meet all of the learning outcomes for the unit. The criteria for a pass grade describes the level of achievement required to pass this unit.

### Grading criteria

<table>
<thead>
<tr>
<th>To achieve a pass grade the evidence must show that the learner is able to:</th>
<th>To achieve a merit grade the evidence must show that, in addition to the pass criteria, the learner is able to:</th>
<th>To achieve a distinction grade the evidence must show that, in addition to the pass and merit criteria, the learner is able to:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>P1</strong> describe the structure of the aviation industry and the organisations involved</td>
<td><strong>M1</strong> explain the impacts of developments on the structure of the aviation industry</td>
<td><strong>D1</strong> make recommendations for how the aviation industry should respond to a significant key future development</td>
</tr>
<tr>
<td><strong>P2</strong> describe the development of the aviation industry and the major factors that have affected this development</td>
<td><strong>M2</strong> explain the effects of economic regulation, deregulation and liberalisation on the aviation industry giving specific examples where appropriate</td>
<td><strong>D2</strong> evaluate the long-term impact of the deregulation and liberalisation of the aviation industry in the US and the EU, commenting on possible future regulatory developments.</td>
</tr>
<tr>
<td><strong>P3</strong> summarise the steps involved in the economic regulation, deregulation and liberalisation of the aviation industry and the effects of this on the aviation industry</td>
<td><strong>M3</strong> analyse information relating to the scale of the aviation industry and comment on significant factors, major changes and trends.</td>
<td></td>
</tr>
<tr>
<td><strong>P4</strong> describe the scale of the UK aviation industry using graphs and tables where appropriate.</td>
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Essential guidance for tutors

Delivery

This unit gives a general overview of the aviation industry. It could be delivered as a stand-alone unit or before other, more specialist, units as an introduction to the industry.

It is suggested that the structure of the industry is delivered first, as this should help learners by placing organisations into a structured framework. Learners should be encouraged to explore this framework by defining the differences between types of organisation (e.g., airlines and airports), classification of organisations (e.g., scheduled airlines and low-cost scheduled airlines), and the characteristics of organisations (e.g., scheduled airlines operate like a train service; you can buy your ticket on the day and catch any flight). Learners could actually draw this framework into an organisational structure. Time spent exploring and examining this framework should set the whole industry into context, and help learners to better understand this and other units.

Learning outcomes 2, 3 and 4 may be delivered in any order, although learners may find it easier if economic regulation and deregulation is left until last, as it is a broad and complex topic that learners sometimes find difficult to comprehend. It is, however, the topic that has probably had the greatest influence on the development of the industry, and needs to be explored and understood by learners if they are to appreciate many of the issues facing the industry today. This is not a topic that lends itself easily to individual research. Although there are some excellent books available, many of them are set at graduate level. It may be easier to break down the information from these textbooks, and deliver by lecture. Learners can be given individual tasks to research, such as writing a bilateral agreement between the UK and a country of their choice and developing a hub and spoke operation from their local airport on a map of Europe. This is a dynamic topic and there are likely to be several significant regulatory developments during the life of this unit. Learners are expected to keep up to date with the latest developments affecting the UK.

Learning outcomes 2 and 4 allow learners to investigate and research the development of the industry, and the scope and scale of the industry. To do justice to this unit, it is important that learners know how to research and are given support to ensure they develop the research skills needed to work at this level.

There are some excellent websites available containing a wealth of information, for example the Civil Aviation Authority website has virtually all the information needed by learners to be able to detail the scope and scale of the aviation industry. Information can be displayed graphically through a variety of media. For example, displaying a bar chart on PowerPoint indicating 25-year passenger numbers or air transport movements and pointing out on the chart the impact of the first and second Gulf wars, economic recession and the events of 11 September 2001.

There are many websites detailing the development of the aviation industry from which learners can research and obtain information. Learners should ensure that they give the UK viewpoint on these topics in order to meet the assessment criteria.
Locating information can be difficult, and learners should be given guidance on where to find it, how to select the most appropriate content and how to synthesise information coherently. This could be from feedback given at the end of learner presentations, through group discussions or through individual tutorials. In order to ensure learners use the information they have researched effectively, tutors should discuss outcomes with them to ensure that they have met the learning objectives.

Learners may benefit from visits to a range of organisations (eg airports, airlines, cargo/freight operators, aircraft museum, an overseas trip on a scheduled service) and guest speakers, eg an air traffic controller or a customs officer.

The development of communication skills is critical. Learners will be expected to produce a range of written materials and these should be presented to the standard required by the industry. So that learners can access higher grades, tutors should encourage them to interpret the information they find, not just describe it, and consider how it may have affected the industry. Learners should be asked challenging and stimulating questions regarding the data obtained through research, so that they have as many opportunities as possible to access higher grades. This could be done, for example, by setting activities in the context of a management meeting at a small airport or airline. Other learners could take the role of investors interested in development who are to prepare questions in advance of the presentation. Questions, and the answers given, can be documented as evidence.

**Assessment**

The assessment criteria shown in the grading grid can be grouped together to enable learners to expand on one criterion in order gain higher grades. The links are as follows: P1, P2, M1 and D1; P3, M2 and D2; P4 and M3. Where possible learners should be encouraged and given the opportunity to meet the relevant higher grading opportunities at the same time as they attempt the appropriate pass criteria.

**P1 — P2 — M1 — D1**

The evidence for P1 must describe in full the structure of the industry, the various subsections and the role of individual organisations. P2 is a broad topic and, while learners are not expected to know every factor that has contributed to the development of the industry, they are expected to describe the significant factors. These are mentioned in the Unit content. For example, learners could demonstrate their knowledge of developments in airframe design and propulsion by producing a graph showing how the size or speed of aircraft has changed with the introduction of significant aircraft. Developments in airports or airlines could be done partly through case study, if appropriate. In describing key laws and regulations, learners should focus on salient points as they impact on the development of the industry and not describe all parts of legislation in rote form.

M1 asks learners to explain the impacts on the structure of the industry of developments and major factors described in P2. Learners should select developments that they consider to be key and explain how they have affected the industry structure. An example of this could be that as disposable incomes have grown so has the desire to travel, and this has led to a growth in low-cost airlines, which may have impacted on the growth in regional airports.
Evidence for D1 should centre around one significant development that is likely to impact on the aviation industry in the future. This could be aviation specific, e.g., a new aircraft design or a change in health and safety policy, or could be a wider issue, e.g., recession or an increase in EU member states. It should be left to the learner to decide what they consider to be a significant development, and it’s likely that it will be one they have investigated for M1.

P3 — M2 — D2

For P3, learners should summarise in their own words the major steps that led to economic regulation, deregulation and liberalisation. Learners may need guidance to ensure they include all major factors. For example, the history of economic regulations, including how bilateral agreements evolved, should include the Paris Convention 1919, Chicago Convention 1944, Geneva Convention 1947, the reasons why nations failed to agree to a multilateral approach to the exchange of traffic rights, and how this failure to agree led to the development of bilateral agreements between pairs of states. Learners should include a summary of the effects of regulation and deregulation. At this level, these will be fairly basic and not necessarily demonstrate a detailed understanding of effects.

Evidence for M2 should detail how economic regulation, deregulation and liberalisation affected the industry. Learners should demonstrate their understanding by using examples to show actual effects. An example of a response at this level could be that after EU liberalisation, there was a significant growth in low-cost carriers throughout Europe, which has, in turn, led to an expansion in regional airports such as Liverpool John Lennon and Coventry.

For D2, learners need to provide a detailed evaluation, which makes judgements as to what extent deregulation has and will have positive or negative effects on the industry. In commenting on possible future developments learners should suggest aspects of the industry that could change in the future following on from deregulation, e.g., further deregulation in other areas of the world, more airline concentration, low-cost scheduled services on long-haul routes.

P4 — M3

P4 can be covered by the production of a series of graphs and tables, with some commentary of what each graph or table demonstrates. M3 needs to take this a stage further, with analysis of significant factors, what trends may be evident and what conclusions can be drawn.

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

This unit links to the National Occupational Standards in Aviation (Aviation Operations on the Ground) at Level 3. It also links to all units in the BTEC Nationals in Aviation Operations.

This unit offers progression from the Level 2 BTEC Firsts in Travel and Tourism and progression to the Level 5 BTEC Higher Nationals in Travel and Tourism Management.
Essential resources

Learners should have access to information regarding past and current issues in the aviation industry. This could be from a range of sources including the internet, textbooks, trade journals, broadsheet newspapers, guest speakers and visits. The most valuable tool is the internet and learners will need regular access to research and collect information if they are to complete the work associated with this unit.

Indicative reading for learners

Textbooks


Journals and trade publications

*Airline Business* — Reed Business Publishing

*Flight International* — Reed Business Publishing

Websites

www.caa.co.uk — Civil Aviation Authority

www.oag.com — OAG
Key skills

Achievement of key skills is not a requirement of this qualification but it is encouraged. Suggestions of opportunities for the generation of Level 3 key skill evidence are given here. Tutors should check that learners have produced all the evidence required by part B of the key skills specifications when assessing this evidence. Learners may need to develop additional evidence elsewhere to fully meet the requirements of the key skills specifications.

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<th>Communication Level 3</th>
<th>They should be able to develop the following key skills evidence:</th>
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<td><strong>When learners are:</strong></td>
<td><strong>C3.1b</strong> Make a formal presentation of at least eight minutes using an image or other support material.</td>
</tr>
<tr>
<td></td>
<td><strong>C3.2</strong> Read and synthesise information from at least two documents about the same subject. Each document must be a minimum of 1000 words long.</td>
</tr>
<tr>
<td></td>
<td><strong>C3.3</strong> Write two different types of documents each one giving different information about complex subjects. One document must be at least 1000 words long.</td>
</tr>
<tr>
<td></td>
<td><strong>C3.1</strong> Make a formal presentation of at least eight minutes using an image or other support material.</td>
</tr>
<tr>
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<tr>
<th>Information and communication technology Level 3</th>
<th>They should be able to develop the following key skills evidence:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>When learners are:</strong></td>
<td><strong>ICT3.1</strong> Search for information using different sources, and multiple search criteria in at least one case.</td>
</tr>
<tr>
<td><strong>researching the structure and organisations of the aviation industry</strong></td>
<td><strong>ICT3.2</strong> Present combined information such as text with image, text with number, image with number.</td>
</tr>
<tr>
<td><strong>describing the scope and scale of the UK aviation industry using graphs and tables.</strong></td>
<td><strong>ICT3.3</strong> Present combined information such as text with image, text with number, image with number.</td>
</tr>
</tbody>
</table>
Unit 2: Health, Safety and Security in the Aviation Industry

NQF Level 3: BTEC National

Guided learning hours: 60

Unit abstract

Health, safety and security issues are given the highest priority by all aviation organisations. Customers need to have confidence to travel with an airline; when external factors arise which may cause unrest and worry, many will choose not to fly. This is obviously an issue that concerns the industry so regulations and legislation have been developed with co-operation from aviation organisations to ensure that airlines flying into and out of the UK comply with all health, safety and security recommendations.

This unit introduces learners to the significance of health, safety and security to the aviation industry. It encourages them to explore the reasons why they should, and how they can, ensure the health, safety and security of their customers, visitors, colleagues and selves when working in the aviation industry.

Learners need to understand the legislation relevant to the aviation industry and its impact on staff, visitors and customers. They will not need to study the legislation in depth, but they should understand the purpose of it and who to refer to for advice, information and help.

Learners will investigate the health, safety and security hazards of an organisation within the aviation working environment. They will look in detail at all the possible options to minimise risks, recommend solutions, and predict and evaluate possible outcomes of the measures they suggest.

Finally, learners will investigate the kind of minor incidents they may encounter when working in the aviation industry, and will learn how the industry deals with them.

Learning outcomes

On completion of this unit a learner should:

1. Understand the principles and associated legislation of maintaining health, safety and security in the aviation industry.
2. Understand common health, safety and security hazards of an organisation in the aviation industry.
3. Know the measures used to improve health, safety and security of an aviation environment.
4. Know health, safety and security procedures for minor incidents in the aviation industry.
UNIT 2: HEALTH, SAFETY AND SECURITY IN THE AVIATION INDUSTRY

Unit content

1 Understand the principles and associated legislation of maintaining health, safety and security in the aviation industry

Importance: to the organisation, eg for licensing; to staff, eg to reduce accidents at work; to customers; to passengers; to public relations; to the protection of the environment

Key laws and regulations: Health and Safety at Work Act; legislation relating to the control of noise; substances hazardous to health; working time regulations; working with computers; lifting safely; data protection; fire protection; providing the correct work equipment; personal protective equipment; reporting of accidents and serious occurrences at work or involving the public; aviation security (landside, airside)

Regulatory bodies: eg Civil Aviation Authority (CAA), International Air Transport Association (IATA), Joint Aviation Authority (JAA), Department for Transport

Trade bodies: eg British Air Transport Association (BATA), British Business and General Aviation Association, British Airline Pilots Association

2 Understand common health, safety and security hazards of an organisation in the aviation industry

Health and safety hazards: existing; potential; in the working environment (substances, activities, equipment, foodstuffs); specific to aviation, eg noise, bird strikes, foreign object debris, baggage

Security hazards: unauthorised personnel; invalid documentation; theft of information; theft of property

3 Know the measures used to improve health, safety and security of an aviation environment

Measures: risk reduction; emergency action; cost; benefits; resources required (staff, physical); risk assessment

Health, safety and security: eg customers, passengers, staff, the public, property, information

Aviation environment: airside, eg on ramp, cargo storage; landside, eg baggage reclaim
4 Know health, safety and security procedures for minor incidents in the aviation industry

Procedures: for staff; for passengers; for the public; for the organisation; communication of information; documentation; involvement of third parties, eg emergency services

Minor incidents: eg medical, missing passengers at gate, vehicle accident, suspect package, theft, violence, passenger action

Sources of information and advice: eg Health and Safety Executive (HSE), local authorities, safety committees, professional bodies, government departments, companies' safety officers, published sources, Royal Society for the Prevention of Accidents (Rospa)
In order to pass this unit, the evidence that the learner presents for assessment needs to demonstrate that they can meet all of the learning outcomes for the unit. The criteria for a pass grade describes the level of achievement required to pass this unit.

### Grading criteria

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<tr>
<th>To achieve a pass grade the evidence must show that the learner is able to:</th>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>P1</strong> state the importance of maintaining health, safety and security in aviation</td>
<td><strong>M1</strong> explain how health, safety and security laws and regulations have impacted on the operation of aviation organisations</td>
<td><strong>D1</strong> assess the effectiveness of health, safety and security laws and regulations in the aviation industry, suggesting improvements that could be made</td>
</tr>
<tr>
<td><strong>P2</strong> describe key laws and regulations, and the roles of regulatory and trade bodies that oversee their implementation</td>
<td><strong>M2</strong> recommend realistic measures that could be taken in response health, safety or security hazards in aviation</td>
<td><strong>D2</strong> evaluate the effectiveness of measures and procedures in place to maintain health, safety and security, and deal with minor incidents in an aviation environment</td>
</tr>
<tr>
<td><strong>P3</strong> describe common health, safety and security hazards in the aviation environment</td>
<td><strong>M3</strong> explain the use of specific procedures for minor incidents in an aviation environment.</td>
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</tr>
<tr>
<td><strong>P4</strong> describe, using examples, measures taken to improve health, safety and security in an aviation environment</td>
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</tr>
<tr>
<td><strong>P5</strong> describe the procedures to be taken for minor incidents within the aviation working environment, using appropriate sources of information and advice.</td>
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</table>
Essential guidance for tutors

Delivery

Health, safety and security are vital to the aviation industry. The customer has a choice to use whichever airport or airline they feel most comfortable and safe with. It is vital to the successful running of the business and will help to retain customers such as frequent business flyers. It is therefore important that learners are aware of health, safety and security prior to commencing employment in this sector.

Learners would benefit from a visit to an airport and from talks with guest speakers such as fire officers, security officers, safety officers and airline representatives. This will enable learners to get a feel for the types of hazards that are found in the aviation environment.

Although aviation has its own specific types of hazards associated with it, tutors should remember that the focus of this unit is on health and safety in a work environment, on a general level. Other units in this qualification offer learners the opportunity to look at aviation specific health and safety in greater depth in areas such as emergency operations. Therefore, learners would benefit from looking at a range of workplaces such as shops or train stations to gain an understanding of common issues arising from health and safety involving the general public.

Case studies would help learners understand the relevance of the different laws or regulations to the industry and would help them do risk assessments, and from this recommend ways of improving/ensuring health, safety and security.

The National Geographic TV channel has excellent documentaries on air crash investigations, security and other similar subjects. Viewing these programmes would enhance learners’ experience and understanding of the subject, given that they are likely to have had very little first hand experience of this themselves.

The BBC series Airport would help learners identify hazards and provide the opportunity for group discussion, as would any current health safety and security issues currently in the news.

An airport, airline or handling agent, or any other type of organisation within the industry, can be studied to highlight to learners the importance of safety management systems and training.

Assessment

The assessment criteria shown in the grading grid can be grouped together to enable learners to expand on one criterion in order gain higher grades. The links are as follows: P1, P2, M1 and D1; P3, P4, and M2; P5, M3 and D2. Where possible learners should be encouraged and given the opportunity to meet the relevant higher grading opportunities at the same time as they attempt the appropriate pass criteria.
For P1, learners need to demonstrate a clear understanding of the importance of health and safety, both in a general work context and specifically in the aviation environment. In doing so, learners may describe health and safety in general terms in the workplace. For instance, when describing the importance to staff, they may state that health and safety is important to prevent an accident which could cause them a serious injury and thus affect their quality of life. If the learner wishes to give real workplace examples to illustrate their description, these should be from the aviation industry. For example, a learner could suggest that staff who refuel planes have to wear ear protection so that they do not suffer damage to their ears, which would have long-term hearing implications and affect them for the rest of their lives.

For P2, learners should focus their descriptions on the key points of the relevant laws and regulations only, and not reproduce large amounts of the legislation. Instead, the learner is expected to summarise the laws and regulations in their own words, and in doing so should describe how the relevant bodies oversee their implementation.

For M1, learners need to develop the descriptions given in P1 and P2 and say how the laws and regulations have impacted on the aviation industry. An example of an appropriate level of response for M1 would be, ‘Airlines that ask for the details of customers on their website when they are making bookings have to ask the customers’ permission if they want to pass on the information to third parties. They also have to state what the information will be used for and give customers the option to say ‘no’, they don’t want their information passed to anyone else or used for other purposes. This is as a result of data protection legislation.’

For D1, learners should be critical of health and safety laws and regulations, suggesting ways that they could be updated, clarified or overseen in a more effective way. An example of an appropriate level of response could be, ‘Rules about safe manual lifting at work are often not adhered to because staff may be in a rush and to lift every item of luggage correctly would take too long, and many staff are under pressure to get things done. If the conveyor belts break down, staff often have to do manual lifting at check-in. The conveyors should be made more reliable and there should be equipment on hand to help staff in this period.’

For P3, learners should describe all potential hazards listed in the content and descriptions should be relevant to aviation. For instance, rather than simply stating that people may have their personal possessions stolen at the airport, learners should give descriptions that are specific to the environment, such as, ‘Arriving passengers may have their luggage stolen from the carousel as there are no security checks to make sure the person picking it up is the owner.’

Descriptions for P4 should be realistic measures used within the aviation industry. For instance, a description of risk reduction landside could be continuous announcements asking passengers to keep their baggage with them at all times.
For M2, case study material should be used as it is unlikely that learners will have access to real-life situations where they will be able to see health, safety and security hazards in an aviation environment. Learners should be presented with a scenario where a minimum of four hazards are identified. For instance, these could be in the form of the minutes from a staff meeting in which some concerns about health, safety and security have been raised. The learner could then suggest ways to minimise the risks.

Examples of potential hazards could be: concerns that a particular low-cost airline is not checking passengers’ passports thoroughly enough before boarding; new marble floors in the departure areas are proving too slippery after they have been waxed in the morning; some staff are not displaying their security badges clearly enough with the pictures facing out. Learners’ responses to the case study should be realistic and in detail, not simply a bulleted list of actions.

P5 — M3 — D2

For P5, learners should describe procedures for dealing with minor incidents in aviation. They should describe a minimum of four minor incidents and the procedures that may be in place. Procedures should be those used by one or more actual aviation organisations. Learners should present evidence along with a bibliography showing where information was obtained from for each incident described.

For M3, learners should state why certain measures are used to deal with minor incidents. An example of an appropriate level of response for M3 would be, ‘The airline makes announcements for missing passengers until 10 minutes before the scheduled departure time. After this time they close the gate and offload the passengers’ luggage. They do this to give the passengers as much warning as possible, but they can’t hold on indefinitely because it will delay the flight and cause inconvenience to the airline and the other passengers and they could miss their take off slot. The airline offloads the baggage because it could contain a bomb or other dangerous substance.’

For D2, learners should analyse how effective these measures are in dealing with incidents when they arise. In order to do this it is likely that they will need to gain information and advice from a guest speaker as they are unlikely to have access to health and safety records that show this.

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

This unit links to the National Occupational Standards in Aviation (Aviation Operations on the Ground and Cabin Crew) at Level 3. It also links to the following units in the BTEC Nationals in Aviation Operations:

- Unit 1: The Aviation Industry
- Unit 3: Meeting Customer Needs in the Aviation Industry
- Unit 9: Air Cargo Operations
- Unit 12: Preparation for Working in the Aviation Industry
- Unit 14: Human Resources in the Aviation Industry
- Unit 19: Conflict Management for Aviation.
This unit offers progression from the Level 2 BTEC Firsts in Travel and Tourism and progression to the Level 5 BTEC Higher Nationals in Travel and Tourism Management.

**Essential resources**

Learners should have access to reliable sources of health and safety information, eg libraries and other research facilities, including the internet, health and safety publications, copies of current legislation and regulations.

**Indicative reading for learners**

**Textbook**


**Website**

www.hse.gov.uk Health and Safety Executive
Key skills

Achievement of key skills is not a requirement of this qualification but it is encouraged. Suggestions of opportunities for the generation of Level 3 key skill evidence are given here. Tutors should check that learners have produced all the evidence required by part B of the key skills specifications when assessing this evidence. Learners may need to develop additional evidence elsewhere to fully meet the requirements of the key skills specifications.

### Communication Level 3

<table>
<thead>
<tr>
<th>When learners are:</th>
<th>They should be able to develop the following key skills evidence:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• describing common health and safety hazards in the aviation industry</td>
<td></td>
</tr>
<tr>
<td>• researching key laws and regulations</td>
<td>C3.1b  Make a formal presentation of at least eight minutes using an image or other support material.</td>
</tr>
<tr>
<td>• describing key laws and regulations and trade bodies that oversee their implementation.</td>
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<tr>
<td></td>
<td>C3.2   Read and synthesise information from at least two documents about the same subject.</td>
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<td></td>
<td>Each document must be a minimum of 1000 words long.</td>
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<tr>
<td></td>
<td>C3.3   Write two different types of documents each one giving different information about complex subjects.</td>
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<tr>
<td></td>
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<tr>
<td></td>
<td>One document must be at least 1000 words long.</td>
</tr>
</tbody>
</table>

### Information and communication technology Level 3

<table>
<thead>
<tr>
<th>When learners are:</th>
<th>They should be able to develop the following key skills evidence:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• researching the roles of regulatory trade bodies</td>
<td>ICT3.1 Search for information using different sources, and multiple search criteria in at least one case.</td>
</tr>
<tr>
<td>• describing procedures to be taken for minor incidents within the aviation working environment.</td>
<td>ICT3.3 Present combined information such as text with image, text with number, image with number.</td>
</tr>
</tbody>
</table>
Unit 3: Meeting Customer Needs in the Aviation Industry

NQF Level 3: BTEC National
Guided learning hours: 60

Unit abstract

Providing excellent customer service that meets the needs of the individual is a vital part of the aviation industry. Within such a fast-moving industry, it is a team effort to ensure that all customers experience an enjoyable and, most importantly, a safe flight with their chosen airline. It is vital that all team members understand their role and its importance in ensuring on-time aircraft departures which comply with all health, safety and security issues.

Within the aviation industry, the customer has a vast choice of airlines with which to travel. Often it will be the quality of customer service provided that distinguishes one airline from another. Aviation organisations realise that good customer service will ensure customer loyalty and improve business performance. This unit introduces learners to the principles of customer service as they apply to the aviation industry.

Meeting the specific needs of various customer types will be dealt with to ensure that all learners appreciate the importance of treating customers as individuals. Role-play scenarios will be used to allow learner to demonstrate knowledge, understanding and ability, using a variety of different customer service situations both at the airport and on board the aircraft.

The knowledge that learners gain from this unit will enable them to offer excellent customer service within any aviation organisation.

Learning outcomes

On completion of this unit a learner should:

1. Understand the importance of meeting customer needs in aviation
2. Know the customer service skills required to meet customer needs
3. Know the products and services provided to meet the individual needs of customers in an aviation organisation
4. Be able to deal with customer service situations in the aviation industry.
Unit content

1 Understand the importance of meeting customer needs in aviation

Customer needs: products and services; levels of service; specific needs

Importance to the organisation: keeping existing customers satisfied; increasing customers’ loyalty; ensuring repeat business; enhancing an organisation’s image; providing an edge over the competition; increasing sales and usage by attracting new customers; the consequences of poor customer service for the customer, the staff and the organisation

Importance to the customer: meeting individual customers’ needs; exceeding customers’ expectations; safe and secure environment for internal and external customers

Importance to the employee: a happier working environment; job satisfaction; higher self-esteem; possibility of promotion

2 Know the customer service skills required to meet customer needs

Communication: verbal (one way, two way); non-verbal, eg writing, electronic; listening skills; barriers to communication, eg lack of internet access, lack of confidence using computer technology, language; problems resulting from communication barriers, eg errors in bookings; assessing the effectiveness of communication, eg customer service questionnaires, mystery shoppers

Presentation: of self, eg hygiene, dress, personality, appearance; of working environment (airport and on board aircraft)

Teamwork: conflict within teams; motivation; team formation; team roles; characteristics of team members; delegation of tasks; relationships; lines of authority; role of mentor; benefits of teamwork to colleagues, customers and the organisation

3 Know the products and services provided to meet the individual needs of customers in an aviation organisation

Different types of customer: internal (staff, service providers, partner organisations); passengers (business, leisure); non-passengers

Products and services: eg flights, food and beverages, car parking, children’s services, disabled facilities, frequent flyer clubs, range of ticket types, special cargo services, medical services

Individual needs: by class (first, business, economy); frequent flyers; very important passengers; commercially important passengers; medical conditions; unaccompanied minors; families with young children; disabilities; nervous passengers; special diets; special requirements; airline employee standby passengers
4 Be able to deal with customer service situations in the aviation industry

*Customer service:* providing information and advice; providing assistance; dealing with complaints; managing passenger behaviour

*Situations:* at the airport, eg invalid travel documentation, excess baggage, problems at security, late passengers, missing passengers, delayed flights, missing baggage, diverted flights, problems with customs clearance; on board the aircraft, eg double-booked seats, storage of hand baggage, nervous passengers, problems with meals, turbulence
In order to pass this unit, the evidence that the learner presents for assessment needs to demonstrate that they can meet all of the learning outcomes for the unit. The criteria for a pass grade describes the level of achievement required to pass this unit.

**Grading criteria**

<table>
<thead>
<tr>
<th>To achieve a pass grade the evidence must show that the learner is able to:</th>
<th>To achieve a merit grade the evidence must show that, in addition to the pass criteria, the learner is able to:</th>
<th>To achieve a distinction grade the evidence must show that, in addition to the pass and merit criteria, the learner is able to:</th>
</tr>
</thead>
<tbody>
<tr>
<td>P1 describe the importance of meeting customer needs in the aviation industry</td>
<td>M1 explain how customer service skills can help to meet specific customer needs in aviation</td>
<td>D1 make recommendations for a specific aviation organisation on how it can improve its performance in meeting individual customer needs</td>
</tr>
<tr>
<td>P2 describe the customer service skills required to meet customer needs in the aviation industry</td>
<td>M2 explain how products and services provided by a specific aviation organisation can help to meet the individual needs of customers</td>
<td>D2 evaluate own performance in the role-play situations and make recommendations for future improvements</td>
</tr>
<tr>
<td>P3 describe the products and services provided by aviation organisations designed to meet the needs of individual customers</td>
<td>M3 deal effectively with customers in aviation situations.</td>
<td></td>
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</tbody>
</table>
Essential guidance for tutors

Delivery

This unit highlights the importance of customer service in order to meet passenger needs and ensure a safe and on-time aircraft departure. It is important to emphasise the idea of ‘excellent’ customer service, as the airline industry is a highly-competitive environment and customer service may be the only factor that differentiates one airline from another. It is also important to remember that passengers are airline customers and that they have a choice as to which airline they fly with. If customer service standards do not meet their expectations they will take their business elsewhere.

Learners can use their own experiences of customer service either from their part-time jobs, from work experience, or as customers themselves in order to explore the subject in group discussions. It would be helpful to use the airline and airport television programmes as a basis for class discussions — highlighting areas of good and bad customer service.

Guest speakers from the aviation industry could be used to demonstrate the breadth of customer service provision at the centres’ local airport. It would also be beneficial for learners to visit an airport to watch the customer types travelling and using the airport facilities. Visits to other aviation organisations, such as call centres and travel agents, would be useful to highlight customer needs and expectations when booking a flight or a holiday.

It is important that learners understand the importance of customer service for the organisation, customer and employee, as this will allow individual needs to be met as far as possible. Internal and external customers expect excellent customer service skills, and the learner should be able to apply their knowledge and understanding gained in this unit in role-play situations. Role play should take place in settings that are as realistic as possible; for example a simulated aircraft cabin.

In order to meet specific passenger needs, the learner will need to identify and be able to use a variety of communication methods. It is vital that a wide variety of passenger types are discussed throughout this unit and potential situations recognised and dealt with effectively. It would be useful to make the learning activities as interactive as possible by role playing passenger types, and identifying how best to meet their needs in an airport environment and on board the aircraft.

Teamwork must be considered within this unit, because to meet passenger needs effectively, a teamwork philosophy must be used. The aviation industry operates professionally only when all employees work together to achieve a common goal, which in general is: happy customers, happy employees, safe aircraft and on-time departures. Teamwork activities will build up confidence and learners’ trust in each other and allow them to appreciate their own personal talents and abilities.
Airlines have a variety of customer types travelling on their aircraft. Learners must be able to recognise the customer types who use particular airlines and understand their needs and expectations. This understanding will allow the learner to develop strategies for dealing with potential customer service situations that arise in an airport environment and on board an aircraft.

Assessment

The assessment criteria shown in the grading grid can be grouped together to enable learners to expand on one criterion in order gain higher grades. The links are as follows: P1, P2 and M1; P3, M2 and D1; P4, M3 and D2. Where possible learners should be encouraged and given the opportunity to meet the relevant higher grading opportunities at the same time as they attempt the appropriate pass criteria.

P1 — P2 — M1

To achieve the P1 criterion, learners must describe why customer service is important to the aviation industry. This will include its importance to organisations, to customers and to employees. It would be beneficial for learners to have a customer service related presentation from an airline or airport guest speaker, where they could ask questions in order to generate evidence. Examples from aviation organisations could be used to support descriptions where appropriate.

P2 asks the learner to describe the skills needed to meet the needs of customers; the learner should relate this to communication, presentation and teamwork.

M1 relates to P1 and P2, asking the learner to analyse why employees within aviation need excellent customer service skills and how they help to meet specific customer needs. Learners do not need to research a specific organisation for this criterion, although they may find it useful to use examples to support their explanation. An example of a suitable level of response would be, ‘It is important for staff such as those working at check-in to have very good personal presentation. This is because customers will feel they are getting a professional service, and that they are in safe hands. If the staff looked scruffy and were wearing their own clothes, passengers may worry that other aspects of the service weren’t up to scratch and may not want to fly with that airline.’

P3 — M2 — D1

To obtain P3, the learner must describe the types of products and services offered by aviation organisations and relate these to customers and their needs. For example, learners could describe the range of catering outlets at an airport, noting how each one meets the needs of different types of customers. Evidence for P3 should not be specific to any particular organisation, but should cover all types of aviation organisations in broad terms.

M2 allows for further development of P3, allowing the learner to investigate a specific organisation and explain how the range of products and services on offer meet its customers’ needs. For example, if a learner investigated a scheduled airline they could explain how their online check-in procedure helps to meet the needs of business travellers.

For D1, learners need to recommend ways in which the organisation selected for M2 could meet its customers’ needs better. Improvements could be in the form of changes to products and services or changes to customer service skills of its staff.
P4 — M3 — D2

To achieve P4, learners should take part in either role plays or real-life situations that prove they are able to handle customer service situations, both at the airport and on board an aircraft. Learners should provide customer service in a total of four separate scenarios, each dealing with a different type of customer service as detailed in the essential content.

For M3, the learner should display a higher level of skill and may show initiative or independent skills. Evidence for P4 and M3 should be presented in the form of an observation sheet, which could be supported by witness testimony if the learner has provided the service in a real situation. The observation sheet should detail how and why the learner has achieved the criterion or criteria and should provide evidence of the ability of the learner to think quickly and handle situations with confidence.

For D2, learners’ evaluations should be insightful and critical, and be based on feedback from observer(s). Recommendations could be short-term, ie for their next role play, or longer term, with consideration for their chosen career and future training or a work placement.

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

This unit links to the National Occupational Standards in Aviation (Aviation Operations on the Ground and Cabin Crew) at Level 3. It also links to the following units in the BTEC Nationals in Aviation Operations:

- Unit 1: The Aviation Industry
- Unit 2: Health, Safety and Security in the Aviation Industry
- Unit 6: Marketing the Aviation Industry
- Unit 8: Handling Air Passengers
- Unit 12: Preparation for Working in the Aviation Industry
- Unit 18: Team Leadership in the Aviation Industry
- Unit 19: Conflict Management for Aviation.

This unit offers progression from the Level 2 BTEC Firsts in Travel and Tourism and progression to the Level 5 BTEC Higher Nationals in Travel and Tourism Management.

Essential resources

It is important for learners to have access to library and research facilities, including the internet, in order to investigate the provision of customer service in the aviation industry.
Indicative reading for learners

Textbooks

CD ROM
Key skills

Achievement of key skills is not a requirement of this qualification but it is encouraged. Suggestions of opportunities for the generation of Level 3 key skill evidence are given here. Tutors should check that learners have produced all the evidence required by part B of the key skills specifications when assessing this evidence. Learners may need to develop additional evidence elsewhere to fully meet the requirements of the key skills specifications.

<table>
<thead>
<tr>
<th>Communication Level 3</th>
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<tbody>
<tr>
<td>When learners are:</td>
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<tr>
<td>• describing the importance of meeting customer needs in the aviation industry</td>
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<tr>
<td>• describing the products and services provided by aviation organisations to meet the needs of individual customers.</td>
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<tr>
<th>Information and communication technology Level 3</th>
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<tbody>
<tr>
<td>When learners are:</td>
</tr>
<tr>
<td>• researching aviation organisations’ products and services</td>
</tr>
<tr>
<td>• describing products and services designed to meet the needs of individual customers.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Improving own learning and performance Level 3</th>
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<tbody>
<tr>
<td>When learners are:</td>
</tr>
<tr>
<td>• researching customer service skills requirements to meet customer needs in the aviation industry</td>
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<tr>
<td>• providing customer service in aviation situations.</td>
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<tr>
<td>Problem solving Level 3</td>
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<tr>
<td>When learners are:</td>
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<tr>
<td>• providing customer service in aviation situations.</td>
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<tr>
<th>Working with others Level 3</th>
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<tbody>
<tr>
<td>When learners are:</td>
<td>They should be able to develop the following key skills evidence:</td>
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<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>• providing customer service in aviation situations.</td>
<td>WO3.2 Seek to develop co-operation and check progress towards your agreed objectives.</td>
</tr>
</tbody>
</table>
Unit 4: Air Travel Information

NQF Level 3: BTEC National
Guided learning hours: 60

Unit abstract

Those seeking to work in the aviation industry will probably already have a keen interest in air travel and will wish to develop their knowledge. This unit expands and extends learners’ knowledge of the world in relation to location of airports and routes, air travel information, the basics of fares and ticketing, and information relating to world climate and health.

The unit is a good starting point in helping learners appreciate the globe in relation to air travel: to locate countries, capitals, hubs, gateways and be knowledgeable about routes and landscapes. The unit enables learners to recognise continents, oceans and seas, rivers and lakes, deserts, plains and mountain ranges. It also helps learners to appreciate the directions of travel across International Air Transport Association (IATA) areas and sub-areas via different global indicators.

Learners will learn about the different types of airlines, flights, fares and tickets, which will enable them to select the best options for air travellers. Rather than booking via an agency, learners will be able to select their own flights and find out relevant details, including type of aircraft, configuration, classes of service, transit and airport information, and routes. They will also learn how to calculate flying times.

Research and practical tasks will expand learners’ knowledge in relation to world climate, for example dry seasons and temperature. Learners will investigate the sources of information available on world health issues, such as specific health warnings and restrictions, and will also be able to appreciate the effects of air travel on the health of passengers.

Learning outcomes

On completion of this unit a learner should:

1. Know worldwide geography in relation to airline routeing
2. Be able to use timetables and tariffs to provide flight information
3. Understand the basics of fares and ticketing in relation to different types of airlines
4. Be able to provide ancillary information to air travellers in relation to climate and health.
Unit content

1 **Know worldwide geography in relation to airline routeing**

*Continents*: location of continents; hemispheres; location of International Air Transport Association (IATA) Conference Areas

*Countries, hubs and gateways*: location of countries; capitals; hubs and gateway airports; location of IATA conference sub-areas

*Worldwide physical features*: ice caps; oceans and seas; mountain ranges; tundra; rainforest; deserts; lakes; rivers; islands

*Routes*: eg global indicators (GI), air corridors/air ways, time zones, lines of latitude and longitude, eastern and western hemisphere

2 **Be able to use timetables and tariffs to provide flight information**

*Timetables and tariffs*: paper-based; ICT-based

*Information*: IATA three-letter codes (city, airport); airline designator codes; flight routeings; minimum connecting times; baggage allowances; excess baggage; currency conversions; taxes and service charges; aircraft types; aircraft configuration; class of service; surface transportation to/from airports; terminal information; check-in times; types of fares; class of fares; flight schedules; connecting services; intermediate stops; local country times; flying times

3 **Understand the basics of fares and ticketing in relation to different types of airlines**

*Types of airlines*: scheduled; low-cost scheduled; charter; executive

*Types of flight*: short haul; long haul; domestic; international; interline

*Types of ticket*: IATA manual; IATA automated; e-ticket; ticketless; charter ticket; multi-sector

*Fare types*: normal scheduled (F, J/C, Y), rebated (child, infant), class of service, eg enhanced economy; special scheduled (APEX, PEX, Excursion, ITX); charter; low-cost scheduled

*Air travellers*: leisure; business; other, eg medical, education, immigration
4 Be able to provide ancillary information to air travellers in relation to climate and health

*Climate knowledge*: gulf stream; jet streams; wind (hurricanes, tornadoes, storms); monsoons; wet and dry seasons; extreme heat and cold; snow fall; time of year; prevalence

*Effects of travel*: time zones; jet lag; dehydration; other health issues, eg hypoxia, DVT

*World health information*: interpretation and use of sources of information (government, travel industry guides); country-specific health warnings (malaria, cholera, typhoid, HIV/AIDS, other epidemics); precautions available (vaccination, immunisation, other); entry requirements (health certificates, country of origin)
## Grading grid

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

<table>
<thead>
<tr>
<th>Grading criteria</th>
<th>To achieve a pass grade the evidence must show that the learner is able to:</th>
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<th>To achieve a distinction grade the evidence must show that, in addition to the pass and merit criteria, the learner is able to:</th>
</tr>
</thead>
<tbody>
<tr>
<td>P1</td>
<td>locate countries, capitals, gateways and physical features for worldwide routes</td>
<td>M1 explain how different air travellers’ needs have been met by selecting flights for specific journeys</td>
<td>D1 analyse the route air travellers will take on two specific multi-sector flights (from the UK to an international destination, including stopover) in respect of geography, climate and health.</td>
</tr>
<tr>
<td>P2</td>
<td>use timetables and tariffs to provide information to air travellers in relation to specific flights</td>
<td>M2 explain the significance of the effects of travelling to specific areas of the world where health and climate impact on the air traveller.</td>
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</tr>
<tr>
<td>P3</td>
<td>describe different types of airlines, flights, fares and tickets available to air travellers</td>
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<td></td>
</tr>
<tr>
<td>P4</td>
<td>select flights and fare types for two specific multi-sector routes for two different types of air traveller, providing appropriate travel information, explaining your choice</td>
<td></td>
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</tr>
<tr>
<td>P5</td>
<td>provide information to travellers in relation to climate and health for different destinations.</td>
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</tbody>
</table>
Essential guidance for tutors

Delivery

This unit gives learners a base of knowledge and understanding which can be built on in other units. It is expected that those entering employment in the aviation industry will have sufficient geographical knowledge to locate destinations and flight routeings and appreciate the main physical features of the world. For example, they should be able to visualise the world beneath the flight path and know that a flight from London to Vancouver will probably travel over Greenland and the frozen north of Canada, crossing the tundra and frozen lakes. They should be able to visualise that a flight from London to Australia via Los Angeles will cross both the Atlantic and Pacific oceans, travelling across the North American plains and the Rocky mountains.

Learners should develop their knowledge of the world not only in terms of continents, seas, countries and capitals, but in context to include IATA Conference and sub-areas, gateway airports and global indicators. All destinations should be referenced to their three-letter city/airport codes. Information with regard to IATA Conference areas and their sub-areas can be obtained from the Air Tariff and IATA resource packs produced by various training providers.

The main physical features of the world should be taught through map work, videos and flight routeings. These routeings can be taken from airline magazines available from most airlines or on websites.

A basic knowledge of the different types of airlines and aircraft and their configurations can be taught through visits, guides and videos.

Teaching world geography is never easy and realistically learners will not be able to plot every country, capital and gateway on a map without reference to an atlas. Learners could practise locating all aspects listed in the Unit content using a variety of methods, such as interactive geography games; practical tests using a large wall map (can be an outline only or with details) where learners are asked to point to destinations/physical features; tests with outline maps to complete; plotting routes on wall maps.

Learners should be given opportunities to use a variety of air timetables and tariffs both paper-based and computerised. Learners should also be given queries to research and answer, for example: finding a direct flight from Manchester to New York to arrive on a specific date in the afternoon and providing full information in relation to airports, terminals, baggage allowances, check-in times, flying times etc; information on flights from London Heathrow to Perth, Australia with stop overs, providing information on routeings, baggage allowances, minimum connecting times, surface transportation to and from airports, local times, flying times etc. This topic provides the opportunity for practical activities including real and simulated situations.
Learning outcome 3 covers the basics of IATA airfares and ticketing and provides opportunities for learners to understand types of airlines, flights, tickets, fare types and the different types of air traveller. There is scope for research into types of airlines and flights by putting the learner into the role of an air traveller to find the options available in relation to fare types and tickets. This is an interesting topic where there is no right answer, with internet searches and travel agencies providing a range of fares and ticket options. Providing all learners with one or two specific requests for flights for them to independently research will inevitably result in a wide range of options available and makes for useful comparison and discussion. This learning outcome can form the basis for those learners who wish to proceed to achieving the IATA Airfares and Ticketing qualification.

Learning outcome 4 completes learners’ knowledge in terms of world climate and health in relation to air travel. It also helps the learner to appreciate how air travel can affect the traveller in relation to crossing time zones, suffering from jet lag and being aware of other health issues such as DVT and hypoxia. There are many sources of information, both paper-based and computerised, in relation to climate and world health. Oral presentation of information can be a useful method of both delivery and assessment.

Assessment

The assessment criteria shown in the grading grid can be grouped together to enable learners to expand on one criterion in order gain higher grades. The links are as follows: P1; P2, P3, P4 and M1; P5 and M2; D1. Where possible learners should be encouraged and given the opportunity to meet the relevant higher grading opportunities at the same time as they attempt the appropriate pass criteria.

P1

For P1, it is expected that learners will plot sufficient routes to enable them to locate at least 30 countries, their capitals and one of their gateways. These routes must include the three IATA Conference areas and their sub-areas and the range of physical features in the Unit content. They must use the following global indicators — TS, AT, AP, EH. For example, if the route is LON to DEN via MSP and the global indicator is AT the route could be up the west coast of Scotland and across Greenland (tundra), Canada (lakes and rivers), and the USA (plains and mountains). For each route learners should state the time zones of the destinations, its position in terms of latitude and longitude, whether it is in the eastern or western hemisphere and where possible the ‘air corridor’/’air way’ it is in.

P2 — P3 — P4 — M1

For P2, learners should provide evidence of using at least two types of timetables and tariffs both paper based and computerised at least once, to provide the full range of information in the Unit content. This should be in response to a specific request from at least two different customer types for information. These could be in the form of pen portraits created by the tutor or may be real situations that the learner has dealt with in a work environment. If evidence comes from the workplace, a witness testimony should be provided. Learners can submit evidence for this criterion in written form, it does not need to be a role play.
For P3, learners should describe each type of airline, each type of flight, each type of ticket and each type of fare. For example, they should describe first class, business and economy fare types on scheduled flights. Learners should also include a description of each of the three types of air traveller in the Unit content and how they might use the different types of airlines and fares. For example, a leisure traveller is less likely to travel first or business class on scheduled flights but is more likely to use economy class or travel on budget airlines.

For P4, learners will need to be provided with two specific multi-sector routes to research (minimum two sectors, eg LHR to JFK to LAX); one route from IATA Conference Area 2 into area 3 and the other route from IATA Conference Area 2 into area 1. For each route, learners should select a flight that best suits each different type of air traveller, eg business traveller and leisure traveller for each multi-sector route (four flights in total). Learners should explain why they have selected these particular flights and fare types, this could be in relation to cost, airline, type of flight (scheduled, budget) connecting times, flying times, class of service. Learners should provide appropriate travel information for each flight such as type of aircraft, seating, check-in, terminal and transit information, flying time. Evidence for P4 can be linked to P2 and P5. This criterion should be extended to meet the requirements of M1 by the learner explaining the reasons for their choice of flights for each of the air travellers, and stating how they have met their individual needs.

P5 — M2

P5 requires learners to provide climate and health information for different destinations. Destinations should include 8 different countries; two within IATA Conference Area 2 and three destinations within IATA Conference Area 1 and three destinations within IATA Conference Area 3. Learners can assume that air travellers will be departing from the UK and should also describe how air travel can affect passenger health.

For M2, evidence can be expanded to include an explanation of the significance of travelling to areas of the world where health and climate may impact on the traveller. An example of an appropriate level of response at this level could be for many travellers from Europe, destinations in the Middle East such as Dubai may be too hot during July and August. Travellers not used to extremely hot temperatures may suffer from heat-related conditions such as heatstroke or hyperthermia. This means there is often a reduction in demand for flights and accommodation during these months.

D1

For D1, learners will demonstrate excellent knowledge in relation to all aspects detailed under learning outcomes one and four for two specific multi-sector flights from the UK; one flight to travel in a westerly direction and one in an easterly direction. The commentary should follow the routeing detailing all geographical aspects and explaining the significance of the climate and the health at the final destination and at any intermediate stop-over point (minimum of one per flight). Learners can provide written or verbal commentary. The commentary should be sufficiently detailed to provide the air travellers with a visualisation of the route. Information on climate and health should be accurate, up to date and sufficient to ensure minimum risk to health.
Links to National Occupational Standards, other BTEC units, other BTEC qualifications and other relevant units and qualifications

This unit links to the National Occupational Standards in Aviation (Aviation Operations on the Ground and Cabin Crew) at Level 3. It also links to the following units in the BTEC Nationals in Aviation Operations:

- **Unit 1: The Aviation Industry**
- **Unit 12: Preparation for Working in the Aviation Industry**
- **Unit 20: First Aid and Health for Aviation.**

This unit offers progression from the Level 2 BTEC Firsts in Travel and Tourism and progression to the Level 5 BTEC Higher Nationals in Travel and Tourism Management.

Essential resources

Learners should have access to appropriate reference resources including industry standard timetables and tariffs. These change periodically and centres should ensure they have the most up-to-date versions.

Indicative reading for learners


Website

- [www.caa.co.uk/docs/7/DAP%20facts3.pdf](http://www.caa.co.uk/docs/7/DAP%20facts3.pdf)  Civil Aviation Authority (CAA) article on UK Airspace
- [www.iata.org](http://www.iata.org)  The International Air Transport Association
Key skills

Achievement of key skills is not a requirement of this qualification but it is encouraged. Suggestions of opportunities for the generation of Level 3 key skill evidence are given here. Tutors should check that learners have produced all the evidence required by part B of the key skills specifications when assessing this evidence. Learners may need to develop additional evidence elsewhere to fully meet the requirements of the key skills specifications.

<table>
<thead>
<tr>
<th>Application of number Level 3</th>
<th>They should be able to develop the following key skills evidence:</th>
</tr>
</thead>
<tbody>
<tr>
<td>When learners are:</td>
<td></td>
</tr>
<tr>
<td>• researching timetables and tariffs</td>
<td>N3.1 Plan an activity and get relevant information from relevant sources.</td>
</tr>
<tr>
<td>• using timetables and tariffs to provide information regarding to specific flights</td>
<td>N3.2 Use your information to carry out multi-stage calculations to do with:</td>
</tr>
<tr>
<td></td>
<td>a amounts or sizes</td>
</tr>
<tr>
<td></td>
<td>b scales or proportion</td>
</tr>
<tr>
<td></td>
<td>c handling statistics</td>
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<tr>
<td></td>
<td>d using formulae.</td>
</tr>
<tr>
<td>• using timetables and tariffs to provide information regarding to specific flights.</td>
<td>N3.3 Interpret the results of your calculations, present your findings and justify your methods.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Communication Level 3</th>
<th>They should be able to develop the following key skills evidence:</th>
</tr>
</thead>
<tbody>
<tr>
<td>When learners are:</td>
<td></td>
</tr>
<tr>
<td>• locating countries, capitals, gateways and physical features of worldwide routes</td>
<td>C3.1a Take part in a group discussion.</td>
</tr>
<tr>
<td>• describing the different types of airline, flights, fares and tickets available to air travellers.</td>
<td>C3.1b Make a formal presentation of at least eight minutes using an image or other support material.</td>
</tr>
</tbody>
</table>
### Information and communication technology Level 3

<table>
<thead>
<tr>
<th>When learners are:</th>
<th>They should be able to develop the following key skills evidence:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• locating countries, capitals, gateways and physical features of worldwide routes</td>
<td>ICT3.1 Search for information using different sources, and multiple search criteria in at least one case.</td>
</tr>
<tr>
<td>• providing information to travellers relating to climate and health for a range of destinations</td>
<td>ICT3.3 Present combined information such as text with image, text with number, image with number.</td>
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</tbody>
</table>

### Problem solving Level 3

<table>
<thead>
<tr>
<th>When learners are:</th>
<th>They should be able to develop the following key skills evidence:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• selecting flights for multi-sector routes for different types of air traveller.</td>
<td>PS3.1 Explore a problem and identify different ways of tackling it.</td>
</tr>
</tbody>
</table>
Unit 5: Aircraft Operations

NQF Level 3: BTEC National
Guided learning hours: 60

Unit abstract

Aircraft operations are a key component in the successful running of a commercial airline in an ever-expanding global travel industry. This unit gives learners an introduction to this area, with its many constituent parts, so that they can become more familiar with the basics of planning an airline service.

Those seeking work in the airline and airport industry need to know the basics of aircraft operations including basic aircraft design to route planning procedures. This unit will absorb the learner into the commercial aviation world, offering a new industry related language along the way.

The unit begins with an introduction to the most common types of passenger and cargo aircraft in operation. Some individual types are studied with regards to engine numbers and function. Learners will go on to gain knowledge of the category of aircraft structural mass/weight and the legal requirements concerning route planning, navigation and fuel requirement calculations.

This unit takes the learner on a journey into the exciting world of commercial aviation, explaining not only how flight is achieved, but also the operational requirements that have given the airline world its enviable safety record.

Learning outcomes

On completion of this unit a learner should:

1. Understand the characteristics of different aircraft types
2. Understand aircraft mass (weight) and balance
3. Understand the principles of route, fuel and navigation planning.
UNIT 5: AIRCRAFT OPERATIONS

Unit content

1 Understand the characteristics of different aircraft types

Types of aircraft: regional turbo-prop, eg ATR 72; regional jet, eg Embraer 175; single-aisle, eg 737; medium twin-aisle, eg A330; large twin-aisle, eg 777

Characteristics: load capacity (passenger, cargo); suitability over distance; compatibility with destination airport; reliability; compatibility with fleet (staff training requirements, maintenance requirements)

2 Understand aircraft mass (weight) and balance

Limitations: aircraft limits; fuselage stations and centre of gravity envelope; aircraft performance; factors affecting take-off mass, eg maximum take-off mass (MTOM); zero fuel mass (ZFM); landing mass

Loadsheet: construction; terminology and definitions; standard passenger weights; last-minute changes

Load planning: maximisation of payload; passenger baggage priority; offload procedures; dangerous goods; incompatible loads

3 Understand the principles of route, fuel and navigation planning

Fuel plan: fuel planning tables; legal requirements; critical point (CP) definition; equitime point (ETP) definition; point of no return (PNR) definition

Factors affecting fuel consumption: stages of flight; ambient conditions; headwinds or tailwinds; number and type of engines; aircraft mass; Mach number

Route plan and information sources: planning charts (Aerad, Jeppesen); Standard Instrument Departures (SIDs); Standard Terminal Arrival Routes (STARs); airways; controlled airspace; flight information regions; (radar, procedural); radio aids; instrument landing system (ILS); weather charts, eg significant meteorological information (SIGMET) charts; Terminal Area Forecasts (TAF); Meteorological Terminal Aviation Routine Weather Reports (METARS)

Navigation considerations: waypoints; reporting points; latitude and longitude; tracks and distances; true airspeed; wind component and drift angle; variation; heading; groundspeed; time; navigation systems, eg ground based radio aids, inertial reference, satellite navigation
Grading grid

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

<table>
<thead>
<tr>
<th>Grading criteria</th>
<th>To achieve a pass grade the evidence must show that the learner is able to:</th>
<th>To achieve a merit grade the evidence must show that, in addition to the pass criteria, the learner is able to:</th>
<th>To achieve a distinction grade the evidence must show that, in addition to the pass and merit criteria, the learner is able to:</th>
</tr>
</thead>
<tbody>
<tr>
<td>P1</td>
<td>describe the characteristics of different aircraft types</td>
<td>M1 compare different types of commercial aircraft on long-haul and short-haul routes</td>
<td>D1 evaluate the characteristics and available uses of a specific type of aircraft in commercial operation</td>
</tr>
<tr>
<td>P2</td>
<td>explore mass and balance limitations and their effect on load planning and loadsheets</td>
<td>M2 explain how factors affecting fuel consumption are applied when plotting a route.</td>
<td>D2 evaluate the significance of factors affecting fuel consumption on fuel and route planning.</td>
</tr>
<tr>
<td>P3</td>
<td>describe fuel planning and factors affecting fuel consumption</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P4</td>
<td>describe the route planning process and navigation considerations</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Essential guidance for tutors

Delivery

This unit enables learners to discover the basics of civil aviation and the realities and practices of the commercial workplace procedures.

There is ample opportunity for learners to undertake research and investigation, either individually or as part of a group project.

Learners will learn about aircraft operations with an introduction to the types of passenger and cargo aircraft in daily use on them. The learner should become aware of the diversity of aircraft types and each of their individual specifications. Learners will also gain knowledge of the key elements of aircraft operations including how aircraft are fuelled and navigated across continents and oceans.

Many learners may have had some exposure to aviation, and there is a growing wealth of video/DVD information available. For example, a dedicated television channel gives continual coverage of aviation-related subjects including meteorology. Aircraft accident investigations (both written and televised) can expand and consolidate the learner’s knowledge, and may provide a combined delivery of several aspects of the unit’s topics (eg an accident caused by a combination of aircraft design, weather conditions and inadequate fuel or route planning).

Visits to any aviation-related facilities would be beneficial. Commercial airports are becoming less user-friendly for visitors owing to understandable security requirements, but even viewing the ramp area from a public observation point would help put many topics into focus. In addition, air museums or local flying clubs can provide a wealth of related information, and a local meteorological centre might be closer than you think.

Visits to airline operations rooms and offices would be highly beneficial, but inviting guest speakers to the lecture room can serve equally well. It is important that learners realise the links between the theories being espoused, the practical procedures put into place, and the legal framework embracing what is arguably the most highly-regulated industry in the world. The airlines’ safety record can then be briefly explored and may usefully be compared to other forms of transport.

Assessment

The assessment criteria shown in the grading grid can be grouped together to enable learners to expand on one criterion in order gain higher grades. The links are as follows: P1, M1 and D1; P2; P3, P4, M2 and D2. Where possible learners should be encouraged and given the opportunity to meet the relevant higher grading opportunities at the same time as they attempt the appropriate pass criteria.
UNIT 5: AIRCRAFT OPERATIONS

P1 — M1 — D1

For P1, it is expected that learners will demonstrate their understanding of the characteristics of aircraft in commercial operation. Descriptions should include a minimum of eight different types of aircraft (e.g. Airbus A-340) to cover each of the five categories given in the Unit content.

For M1, learners should compare two different types of aircraft used on short-haul routes (domestic and European) and two aircraft used on long-haul (UK to non-European) flights (four in total) and judge their suitability for the route. Learners should look at and compare their dimensions, masses/weights, distance range, passenger loads and fuel capacity.

To achieve D1, learners should evaluate the individual characteristics and available uses of one specific aircraft type such as a Boeing B737 or an Airbus A320. The evaluation could be based on commentary from industry and reviews from trade press. Learners should reference any sources they use.

P2

For P2, the learner must demonstrate an understanding of the principles of aircraft mass and balance and the need for limits. Aircraft performance and limits, including the centre of gravity envelope, MTOM and ZFM should be described. The knowledge required to construct a loadsheet should be demonstrated, together with explanations of standard passenger weights and last minute change procedures. The commercial imperatives that drive the maximisation of payload should be understood, together with the sometimes thorny issues of passenger baggage priority and ‘over booking’. The learner is expected to understand the planning involved for dangerous goods and incompatible loads.

P3 — P4 — M2 — D2

To achieve P3, learners must describe fuel planning and factors affecting fuel consumption calculations as required to complete a navigation/fuel flight plan. Learners should show familiarity with fuel planning tables. A planned route could be provided, or the planning process described.

The evidence produced for P4 should demonstrate learners’ understanding of the principles of route planning. Departure and arrival charts (SIDs and STARs) should be described together with Aerad and Jeppesen planning charts. Learners should describe the navigation elements used in route planning: airways, controlled airspace, flight information regions, radar separation, procedural separation, radio aids, satellite navigation and instrument landing systems (ILS).

Evidence for P3 and P4 can be extended to meet the requirements of M2 by explaining how factors affecting fuel consumption are applied when plotting a route (e.g. selecting a lower flight level to offset forecast headwinds).

For D2, learners should extend the evidence from P3, P4 and M2 to evaluate the significance of factors affecting fuel consumption on fuel and route planning (e.g. the commercial trade-off between ‘tankering’ lower-priced fuel and the resulting extra fuel burn due to higher operating weight).
Links to National Occupational Standards, other BTEC units, other BTEC qualifications and other relevant units and qualifications

This unit links to the National Occupational Standards in Aviation (Aviation Operations on the Ground and Flight Deck Crew) at Level 3. It also links to the following units in the BTEC Nationals in Aviation Operations:

- **Unit 1: The Aviation Industry**
- **Unit 9: Air Cargo Operations**
- **Unit 10: Airport Ramp Handling**
- **Unit 11: Aircraft and Airfield Performance**
- **Unit 12: Preparation for Working in the Aviation Industry**
- **Unit 15: Airport Emergency Operations.**

This unit offers progression from the Level 2 BTEC Firsts in Travel and Tourism and progression to the Level 5 BTEC Higher Nationals in Travel and Tourism Management.

**Essential resources**

Learners should have access to appropriate charts reference materials such as CAP385, CAP508 and SRG1149: JAR — FCL ATPL (Aeroplanes).

**Indicative reading for learners**

**Textbook**

Evans J — *Is It on Autopilot?: All You Ever Wanted to Know About Flying*  
Key skills

Achievement of key skills is not a requirement of this qualification but it is encouraged. Suggestions of opportunities for the generation of Level 3 key skill evidence are given here. Tutors should check that learners have produced all the evidence required by part B of the key skills specifications when assessing this evidence. Learners may need to develop additional evidence elsewhere to fully meet the requirements of the key skills specifications.

**Communication Level 3**

<table>
<thead>
<tr>
<th>When learners are:</th>
<th>They should be able to develop the following key skills evidence:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• exploring mass and balance principles and limitations</td>
<td>C3.2 Read and synthesise information from at least two documents about the same subject. Each document must be a minimum of 1000 words long.</td>
</tr>
<tr>
<td>• comparing different types of commercial aircraft.</td>
<td>C3.3 Write two different types of documents each one giving different information about complex subjects. One document must be at least 1000 words long.</td>
</tr>
</tbody>
</table>

**Information and communication technology Level 3**

<table>
<thead>
<tr>
<th>When learners are:</th>
<th>They should be able to develop the following key skills evidence:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• researching sources of information available for route planning</td>
<td>ICT3.1 Search for information using different sources, and multiple search criteria in at least one case.</td>
</tr>
<tr>
<td>• exploring mass and balance limitations and their effects on load planning.</td>
<td>ICT3.3 Present combined information such as text with image, text with number, image with number.</td>
</tr>
</tbody>
</table>
Unit 6: Marketing the Aviation Industry

NQF Level 3: BTEC National

Guided learning hours: 60

Unit abstract

This unit introduces learners to airport and airline marketing — the concept of marketing, its strategic importance to the organisation and the marketing process as a whole. Learners will start their studies by examining the principles of marketing, how they apply to airports and airlines, how marketing is used by these organisations and any constraints that may affect their application.

Learners will then investigate the use of market research by airports and airlines to understand their actual and potential customers (which could be passengers or other organisations), competitors (which may be other transport operators) and the market environment in which they operate. There is an emphasis on both understanding the customer and ensuring that products and services meet with customer and passenger needs and expectations. Learners will also consider ways marketing can influence customer and passenger behaviour.

Learners are introduced to analytical techniques to identify opportunities and potential strategies for aviation organisations. They will also research and investigate the basic marketing strategy of an airport or airline.

Learning outcomes

On completion of this unit a learner should:

1. Understand the principles of marketing and how they apply to aviation organisations
2. Understand market research methods used by aviation organisations
3. Be able to use analytical techniques to identify marketing objectives for aviation organisations
4. Be able to produce a marketing plan to meet an identified objective.
Unit content

1 **Understand the principles of marketing and how they apply to aviation organisations**

*Background and concepts:* definition of marketing; historical perspective; function of marketing; marketing mix; marketing environment; marketing communication methods

*Marketing environment:* nature of business (airline, airport); product; customer (business to business, business to customer); customer segmentation; product life cycle; product portfolio

*Constraints:* financial, eg company budget, current business environment; social, eg environmental, ethical; legal, eg contract and consumer law, data protection; standards of practice, eg advertising standards, codes of practice; company, eg mission statement, business plan

2 **Understand market research methods used by aviation organisations**

*Research objectives:* eg canvas customer opinion, find out competitors, prepare for a marketing campaign

*Factors:* cost; time required; reliability; ICT issues; logistics; specialist skills

*Research methods:* primary (qualitative, quantitative), eg interviews, focus groups, mystery shopper; secondary, eg Civil Aviation Authority statistics, websites; advantages (primary methods, secondary methods); disadvantages (primary methods, secondary methods); appropriate methods

3 **Be able to use analytical techniques to identify marketing objectives for aviation organisations**

*Analytical techniques:* situation analysis, eg SWOT, PEST; marketing audit; product life cycle; other

*Marketing objectives:* eg change customer profile, increase brand awareness, launch a new route, increase market share of budget scheduled flights

4 **Be able to produce a marketing plan to meet an identified objective**

*Plan:* target market segment; market positioning; strategic marketing tools, eg Boston Matrix, Ansoff’s Matrix; niche marketing; mass marketing; possible strategies, eg cost leadership, differentiation; implementation cost; monitoring techniques; review process

*Constraints:* resources (financial, staff, physical); current branding

*Promotional techniques:* eg advertising, sales promotion, tie-ins, loyalty schemes, point of sale merchandising, exhibitions and events
In order to pass this unit, the evidence that the learner presents for assessment needs to demonstrate that they can meet all of the learning outcomes for the unit. The criteria for a pass grade describes the level of achievement required to pass this unit.

### Grading criteria

<table>
<thead>
<tr>
<th>To achieve a pass grade the evidence must show that the learner is able to:</th>
<th>To achieve a merit grade the evidence must show that, in addition to the pass criteria, the learner is able to:</th>
<th>To achieve a distinction grade the evidence must show that, in addition to the pass and merit criteria, the learner is able to:</th>
</tr>
</thead>
<tbody>
<tr>
<td>P1 describe the principles of marketing as they apply to airport and airline organisations</td>
<td>M1 explain how constraints impact on marketing in aviation organisations</td>
<td>D1 evaluate a marketing plan making justified recommendations for improvement.</td>
</tr>
<tr>
<td>P2 examine factors aviation organisations would consider when using research methods to achieve research objectives</td>
<td>M2 explain how different market research methods are used by aviation organisations to meet specific research objectives, taking into account applicable factors</td>
<td></td>
</tr>
<tr>
<td>P3 describe market research methods</td>
<td>M3 demonstrate original concepts in a marketing plan to meet specific marketing objectives.</td>
<td></td>
</tr>
<tr>
<td>P4 use analytical techniques to identify marketing objectives for an aviation organisation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P5 devise a marketing plan for an aviation organisation operating within constraints, to meet specific marketing objectives, including proposed promotional techniques.</td>
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</tbody>
</table>
Essential guidance for tutors

Delivery

It is essential that this unit is delivered in a vocational context throughout. Knowledge of generic, theoretical marketing principles will not help learners unless they are put into an aviation context. It is the application of these principles to airports and airlines that should be the focus of delivery of this unit.

A varied approach is required to deliver this unit. Initially, learners could be given guidance to enable them to research the principles of marketing, using a range of resources. Textbooks would be a useful starting point. This could be enhanced by further research using the internet and developed using examples from visits to industry, talks by visiting speakers or case studies.

Learners should focus on those principles most likely to affect aviation organisations, for example a focus on marketing services rather than goods. Case studies should relate to both airports and airlines to make the differences obvious to learners, e.g. airlines have millions of potential customers but airports only have a few, i.e. airlines and tour operators.

Visiting speakers and visits to industry will also ensure up-to-date and vocational relevance to the delivery of learning outcomes 2 and 3, particularly through the application and analysis of market research and the data it generates.

It is acknowledged that the current marketing strategy of commercial airports and airlines is not in the public domain, but it is usually apparent what generic strategy an organisation is pursuing. In addition, historic information is available and learners should be encouraged to develop their own strategy for an existing or fictitious airport or airline. If learners are devising marketing plans for fictitious organisations, the conclusions drawn from the research should be reasonable and commercially sound.

Assessment

Evidence related to the principles of marketing should involve research into marketing theory, which can be presented or prepared as a written piece of work. Some aspects of the unit requirements relate to learners demonstrating an understanding of the theoretical principles of marketing as they apply to airports and airlines. Evidence must show a vocational context.

When submitting practical application of theory learners can use real or fictional organisations in their evidence. If fictional organisations are used, tutors should provide learners with realistic scenarios. Learners would need to demonstrate that their proposals are realistic by providing some evidence to back up their conclusions. This evidence could be based on an existing airport or airline, existing research or a piece of original research.

A number of assessment activities or one large assignment may be used to measure achievement of the learning outcomes in this unit. If one large assignment is used, learners could be asked to write a marketing plan covering all grading criteria.
When presenting their ideas learners should not be limited to written reports or oral presentations. Learners should be encouraged to use a range of appropriate media to support their own ideas and theories.

The assessment criteria shown in the grading grid can be grouped together to enable learners to expand on one criterion in order gain higher grades. The links are as follows: P1 and M1; P2, P3 and M2; P4, P5, M3 and D1. Where possible learners should be encouraged and given the opportunity to meet the relevant higher grading opportunities at the same time as they attempt the appropriate pass criteria.

**P1 — M1**

In providing evidence for P1, learners must explain the principles of marketing as they apply to airports and airlines. They should cover at least four types of the three categories listed in the *Unit content*, i.e. background and concepts, the marketing environment and constraints, and explain how they are applied using real examples. The principles need not be covered in depth, however learners should show that they know and understand the key stages in the marketing process.

To achieve M1, learners must explain how constraints impact on marketing for airports and airlines. The *Unit content* sets out the types of constraints and all of these should be explained, providing examples from aviation organisations. This is not, however, an exhaustive list and does not take account of unforeseen factors that may have significance at the time of preparing evidence. At this level, learners must demonstrate an awareness of current issues and incorporate them into the evidence. The focus should be on both airports and airlines.

**P2 — P3 — M2**

For P2, learners should examine the factors that aviation organisations would consider in their selection of appropriate research methods in order to achieve their research objectives. All the factors in the *Unit content* should be explored and learners should demonstrate awareness of how each are dependent on the objectives to be achieved through research, and how the combination of these would contribute to different research methods being selected.

For P3, learners must describe different market research methods, ensuring that they cover both primary (qualitative and quantitative methods) and secondary methods discussing advantages and disadvantages of each. At this level only a general understanding is required.

For M2, learners must explain how the different market research methods are used by aviation organisations to meet specific research objectives. They should combine their knowledge from P2 and P3 and the applicable factors to justify when certain methods are used and why. Learners should use examples to support their explanations from aviation organisations, at this level they should not focus on one specific company but source examples from across the sector.

**P4 — P5 — M3 — D1**

In order to achieve P4, learners should use analytical techniques in order to identify what the marketing objectives for an aviation organisation are. This can be for a real company, or may be a fictitious company devised for this purpose by the tutor. To cover this criterion fully learners must use at least two different types of analytical technique, for example learners might perform a SWOT analysis and develop a product lifecycle in order to find out the likely marketing objectives of the company.
For P5, learners need to produce a simple marketing plan for an airport or airline, learners may chose to use the marketing objectives they have identified for an aviation organisation for P4, and use this organisation (real or fictitious); or separate objectives for this, or another company could be provided by the tutor. Only simple marketing information is needed for analysis at this level. Therefore, the plan should be to meet straightforward objectives.

To achieve M3, learners must demonstrate original concepts in their marketing plan in their ideas to meet the marketing objectives. Plans should be carefully thought through and clearly meet the outlined objectives, in a creative but achievable way. Learners must demonstrate their own independent ideas, though they may draw on examples to support their work, to meet this criterion. At this level, the marketing plan should be taken to its ultimate conclusion by the inclusion of tactics, controls and evaluation methods.

To achieve D1, learners must produce an evaluation of a marketing plan, making recommendations for improvement that are justified and reasonable. At this level, learners should compare the marketing plan with others and suggest ways the plan could be improved. This might be to refine strategies to be more cost-effective or to incorporate more targeted marketing following trends in the market. The evaluation may be of their own plan produced for criteria P5 and M3, however if this is used learners must ensure they evaluate the actual marketing plan and not their completion of it. However tutors may feel learners have more scope for evaluation using an existing marketing plan in an aviation context — either real or simulated, for which they can recommend ways it could be improved based on their own research and knowledge.

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

This unit links to the National Occupational Standards in Aviation (Aviation Operations on the Ground) and in Marketing at Level 3. It also links to the following units in the BTEC Nationals in Aviation Operations:

- Unit 1: The Aviation Industry
- Unit 3: Meeting Customer Needs in the Aviation Industry
- Unit 7: e-Business for Airlines
- Unit 12: Preparation for Working in the Aviation Industry
- Unit 13: Airline and Airport Economics.

This unit offers progression from the Level 2 BTEC Firsts in Travel and Tourism and progression to the Level 5 BTEC Higher Nationals in Travel and Tourism Management.

Essential resources

Learners should have access to information regarding current issues in the aviation industry. This could be sought from a range of sources including the internet, textbooks, trade journals, broadsheet newspapers, guest speakers and visits.
Indicative reading for learners

Textbooks
ISBN 061853203X

Proctor T — Essentials of Marketing Research (FT Prentice Hall, 2005)
ISBN 0273694944


Journals and trade publications
Airline Business — Reed Business Publishing
Air Transport World — Penton Media
Flight International — Reed Business Publishing

Website
www.cim.co.uk The Chartered Institute of Marketing
Key skills

Achievement of key skills is not a requirement of this qualification but it is encouraged. Suggestions of opportunities for the generation of Level 3 key skill evidence are given here. Tutors should check that learners have produced all the evidence required by part B of the key skills specifications when assessing this evidence. Learners may need to develop additional evidence elsewhere to fully meet the requirements of the key skills specifications.

### Communication Level 3

<table>
<thead>
<tr>
<th>When learners are:</th>
<th>They should be able to develop the following key skills evidence:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• describing market research methods.</td>
<td>C3.1b Make a formal presentation of at least eight minutes using an image or other support material.</td>
</tr>
</tbody>
</table>

### Information and communication technology Level 3

<table>
<thead>
<tr>
<th>When learners are:</th>
<th>They should be able to develop the following key skills evidence:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• identifying marketing objectives for an aviation organisation</td>
<td>ICT3.1 Search for information using different sources, and multiple search criteria in at least one case.</td>
</tr>
<tr>
<td>• examining factors aviation organisations would consider when using research methods to achieve research objectives.</td>
<td>ICT3.3 Present combined information such as text with image, text with number, image with number.</td>
</tr>
</tbody>
</table>

### Problem solving Level 3

<table>
<thead>
<tr>
<th>When learners are:</th>
<th>They should be able to develop the following key skills evidence:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• devising a marketing plan for an aviation organisation.</td>
<td>PS3.1 Explore a problem and identify different ways of tackling it.</td>
</tr>
</tbody>
</table>
Unit 7: e-Business for Airlines

NQF Level 3: BTEC National
Guided learning hours: 60

Unit abstract

The term ‘e-business’ relates to business activities that are carried out using the internet (the web and email). It encompasses e-commerce, which relates just to buying and selling, but also includes servicing customers (ie business to consumer) and collaborating with business partners (business to business).

E-business is having a huge impact on the aviation industry, and looks set to continue to grow in importance. An increasing number of people are booking flights online, ‘unpackaging’ their holidays and viewing live aviation information such as arrivals and departures. Businesses are using the internet to better communicate with suppliers, and a recent trend is for them to bypass intermediaries in order to communicate directly with customers.

Learners will explore the benefits for consumers and businesses. However, alongside the benefits there are also barriers. For businesses, these barriers include issues connected to employee resistance, planning, resources and training. For consumers, they include website design and payment security. Learners will also find out about ways to overcome these barriers.

Finally, learners will evaluate flight booking websites. They will identify the main criteria by which websites can be judged in terms of usability for consumers, including navigation, quality of information, ability to make bookings and user friendliness.

Learning outcomes

On completion of this unit a learner should:
1 Understand e-business and its impact on airlines
2 Know the benefits of e-business for airlines
3 Understand the barriers to the development of e-business within airlines
4 Know the relevant features of effective websites providing flight bookings.
Unit content

1 Understand e-business and its impact on airlines

*E-business*: definition (conducting business using the internet); business to consumer, eg promotions, bookings, advertising, travel information; business to business, eg e-procurement, advertising, hyperlinks on websites; on-board access to internet

*Impact on customers*: increased choice; speed; greater independence; more information, eg timetables, arrivals and departures, availabilities; ability to compare (prices, products, services); increase in direct booking, less use of agents; online check-in

*Impact on businesses*: better communication with suppliers and customers; ability to bypass agents; marketing opportunities; costs of meeting technological requirements for e-business; changes to security procedures, eg self check-in

*Impact on fares*: increase in price-based competition; reduction in prices; payment for extras, eg checked baggage; early booking incentives; unpackaging

2 Know the benefits of e-business for airlines

*Benefits*: increased visibility; 24-hour information; up-to-date availability information; worldwide accessibility; ease of taking bookings and payment processing; low promotional costs; opportunity to use web and email marketing; ability to obtain customer information; opportunity to protect and build brand; better access to suppliers; global markets; flexible locations

3 Understand the barriers to the development of e-business within airlines

*Barriers*: technological barriers for organisation and customers, eg slow connections, inadequate hardware, slow download times; staff resistance to change; lack of staff training; requirements for web maintenance; inflexibility of business structure; lack of business planning, eg cash flow forecasting, marketing strategy; poor website design; security for payments (perceived, real)

*Overcoming barriers*: organisational issues, eg business planning, staff development, recruiting specialist staff; customer education, eg awareness campaign, online help function; support issues, eg government support, commercial organisations, support for web design, dedicated technical support; investment, eg equipment upgrade
4 Know the relevant features of effective websites providing flight bookings

**Website:** purpose; functions, eg promotional, informative, booking

**Types:** airlines, eg British Airways (BA); travel agents, eg Thomas Cook; tour operators, eg First Choice; online agents, eg Expedia

**Features of effective websites:** ease of navigation, eg navigation bars, links back to home page; content that is up to date and trusted by consumers; provision of information, eg prices, services, availability, routes, contact details; ability to take bookings; user friendliness, eg site map, search tools, foreign language pages; well-written content; professional appearance; fast download times for pages
In order to pass this unit, the evidence that the learner presents for assessment needs to demonstrate that they can meet all of the learning outcomes for the unit. The criteria for a pass grade describes the level of achievement required to pass this unit.

<table>
<thead>
<tr>
<th>Grading criteria</th>
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</tr>
</thead>
<tbody>
<tr>
<td>P1</td>
<td>describe e-business and its impact on airlines</td>
<td>M1 compare the ways in which two airlines have made use of the benefits of e-business</td>
<td>D1 assess the impact of e-business on airlines, highlighting the extent to which benefits have been recognised and barriers overcome</td>
</tr>
<tr>
<td>P2</td>
<td>explain the benefits of e-business for airlines using appropriate examples</td>
<td>M2 compare two different types of websites that provide flight bookings and describe their features.</td>
<td>D2 evaluate a website that provides flight booking facilities and make recommendations for improvement.</td>
</tr>
<tr>
<td>P3</td>
<td>describe barriers to the development of e-business within airline organisations and methods used to overcome them</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P4</td>
<td>describe the features of effective websites that provide flight bookings.</td>
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</table>
Essential guidance for tutors

Delivery

Learners should develop their own definition of e-business as it is used in the airline industry, although this unit is concerned only with business conducted using the internet, eg using websites and email for airlines. While resources do not exist on e-business for airlines, general e-business resources such as textbooks can be used and adapted. Learners should understand the impact of e-business on airline customers; this could be done through considering their own experiences or interviewing family and friends, particularly those who have used airlines prior to e-business developments.

Learners should appreciate the impact of e-business on the way airlines operate, eg their marketing strategies such as email campaigns and the cost of providing a website. Where possible, guest speakers from airlines should be invited to give learners the most up-to-date information. In understanding the impact on fares, learners could compare different airlines’ methods, eg unpackaging costs such as separate one-way fares and checked luggage charges.

Learners should know how e-business has benefited airlines in terms of their ability to operate in a competitive global market. Learners could do this by looking at the growth of low-cost airlines in particular, which have built a customer base that is all online with minimal telephone support.

Learners should also understand the benefits of e-business in terms of building a brand identity. Airlines such as easyJet would make an excellent case study in showing how a well-designed website can benefit the airline as a whole.

The barriers to the development of e-business in airlines are the same as those for many other types of organisations, general resources such as textbooks could be used and adapted. Learners should gain a good understanding of language and jargon, for example download times, but the content of this unit shouldn’t be too technical. Learners could be given a series of scenarios where they need to identify barriers and suggest ways of overcoming them. Guest speakers from web design consultancies could be used to show how solutions can be found to common barriers.

Learners should look at a wide range of flight-booking websites and explore their functionality. Learners could compare a number of websites by being given a ‘mystery customer’ activity, where they need to book or find out information on a particular flight. Trade press such as the TTG often includes reviews of websites, which might be useful in the delivery of this part of the unit.

Assessment

The assessment criteria shown in the grading grid can be grouped together to enable learners to expand on one criterion in order gain higher grades. The links are as follows: P1, P2, M1 and D1; P3; P4, M2 and D2. Where possible learners should be encouraged and given the opportunity to meet the relevant higher grading opportunities at the same time as they attempt the appropriate pass criteria.
UNIT 7: E-BUSINESS FOR AIRLINES

P1 — P2 — M1 — D1

The evidence produced for P1 must firstly identify different types of e-business, eg business to consumer, business to business. Then learners need to describe the way e-business can impact on airlines. Examples of this would be to identify how airlines use the internet to gain more business, such as using websites to promote latest flight offers, and for the learner to then describe how this impacts on the company itself in the form of greater sales and access to customers from all over the world 24 hours a day. Learners could present this information in written format or by means of a presentation.

For P2, learners must explore the benefits of e-business for airlines. Learners should cover all benefits listed in the Unit content and say how they help airlines, giving examples where they support the explanations.

M1 is a development of P1 and P2. Whereas at pass level learners are expected to describe the ways in which e-business affects airlines, at merit level learners must compare the different ways e-business is used by two airlines and judge the extent to which these organisations are making use of the benefits. For example, they could consider which organisation is making the best use of web and email marketing, and which is making the most opportunity to build its brand. It should be noted that this grading criterion does not relate to the effectiveness of these organisations’ websites, as this is covered in M2.

To achieve D1, learners will need to develop a more critical perspective. They should use analytical skills to look at the extent to which airlines as a whole (not just a few organisations) have embraced e-business. It is likely that they will find certain airline companies have recognised the benefits and addressed the barriers more effectively than others. Learners will need to be given general information on the range of e-business resources and should be encouraged to use the internet to independently research the topic area.

P3

For P3, learners should describe each type of barrier as indicated in the Unit content and state at least one way of overcoming each one. Responses must be in an airline context. An appropriate response at this level could be, ‘An airline may receive few bookings due to poor design and usability of its website. This could be overcome by contracting a web design consultant to update and improve the website’.

P4 — M2 — D2

For P4, learners should describe the features that make effective websites. These descriptions should be in general terms, using examples from websites where appropriate to support the descriptions.

The evidence for M2 should build on P4, with the learner comparing two different types of websites providing flight bookings (ie two websites from any two of the following: airlines, travel agents, tour operators, online agents). They should assess how easy to use and how accessible the websites may or may not be. What sets this apart from P4 is that at merit level learners are expected to compare the relative effectiveness of the websites, and assess their features stating which ones are most effective.
The evidence for D2 builds on P4 and M2, asking for an in-depth evaluation of one of the websites. What sets this apart from M2 is that, at this level, learners must make detailed recommendations for improvements, which should be prioritised and justified in terms of the benefits they would bring to customers and the organisation. Learners should be able to demonstrate what they have learned across the unit and put this into practice in their recommendations.

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

This unit links to the National Occupational Standards in Aviation (Aviation Operations on the Ground) at Level 3. It also links to the following units in the BTEC Nationals in Aviation Operations:

- **Unit 1: The Aviation Industry**
- **Unit 6: Marketing the Aviation Industry**
- **Unit 12: Preparation for Working in the Aviation Industry.**

This unit offers progression from the Level 2 BTEC Firsts in Travel and Tourism and progression to the Level 5 BTEC Higher Nationals in Travel and Tourism Management.

Essential resources

Learners must have access to the internet in order to successfully achieve this unit.

Indicative reading for learners

**Textbook**


**Website**

www.electronic-payments.co.uk  
Online and Electronic Payment Solutions
Key skills

Achievement of key skills is not a requirement of this qualification but it is encouraged. Suggestions of opportunities for the generation of Level 3 key skill evidence are given here. Tutors should check that learners have produced all the evidence required by part B of the key skills specifications when assessing this evidence. Learners may need to develop additional evidence elsewhere to fully meet the requirements of the key skills specifications.

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<tr>
<td><strong>They should be able to develop the following key skills evidence:</strong></td>
</tr>
<tr>
<td>• describing e-business and its impacts on airlines</td>
</tr>
<tr>
<td>• explaining the opportunities and benefits of e-business for airlines</td>
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</tbody>
</table>

<table>
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<tr>
<th>Information and communication technology Level 3</th>
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</thead>
<tbody>
<tr>
<td><strong>When learners are:</strong></td>
</tr>
<tr>
<td><strong>They should be able to develop the following key skills evidence:</strong></td>
</tr>
<tr>
<td>• researching websites providing flight bookings</td>
</tr>
<tr>
<td>• describing the criteria used to assess the effectiveness of different websites providing flight bookings</td>
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</tbody>
</table>

<table>
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<tr>
<th>Problem solving Level 3</th>
</tr>
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<tbody>
<tr>
<td><strong>When learners are:</strong></td>
</tr>
<tr>
<td><strong>They should be able to develop the following key skills evidence:</strong></td>
</tr>
<tr>
<td>• identifying barriers to the development of e-business within airline organisations and strategies used to overcome them</td>
</tr>
</tbody>
</table>
Unit 8: Handling Air Passengers

NQF Level 3: BTEC National
Guided learning hours: 60

Unit abstract

Understanding the process that a passenger goes through when travelling by air is at the very centre of the aviation industry. It is important that learners appreciate some of the factors that can result in the process not being fully met and know not only how the passengers are affected but also how the airline and airport staff are.

Aviation workers need to have a good understanding of the passenger process, to ensure customer safety and wellbeing at all times. An understanding of the relevant health and safety issues and legal implications is crucial. This unit aims to develop knowledge and understanding in these key areas and, as such, underpins other units in the qualification and is essential in preparation for work in the aviation industry.

This unit explores the different options available to passengers when arranging their journey, planning routes to and from the airports and using the facilities available around the airport perimeter for overnight stays and car parking. Learning outcome 2 follows the passengers' journey through the embarkation process to enable learners to gain an understanding of the facilities available to passengers and the staff involved in the embarkation process.

Learning outcome 3 enables learners develop an understanding of the safety procedures that have to be adhered to whilst the passenger is on board the aircraft and focuses on the services available to meet passengers with specific needs, eg those passengers travelling with children. Learners will investigate the role that cabin crew play in ensuring passenger safety.

Learning outcome 4 addresses the process and facilities available for handling passengers at the disembarkation stage. Learners will learn about the regulations surrounding passports and visas for visitors arriving from destinations around the World, and the process that passengers go through on arrival and transiting through the airport.

Learning outcomes

On completion of this unit a learner should:

1. Know the options available to customers when travelling to and from airports
2. Understand the process of embarkation and the roles of airport and airline staff
3. Know the facilities and services available to passengers during the flight
4. Know the airport and airline services and facilities during the disembarkation process.
UNIT 8: HANDLING AIR PASSENGERS

Unit content

1 Know the options available to customers when travelling to and from airports

Transport: major road and rail networks; coach operators; taxi and private hire
Car parking: on-airport parking; off-airport parking; private car park operators; courtesy coach transfers; VIP car parking
Inter-terminal transport: monorails; light rail systems; covered walkways; moving walkways
Car rental: on airport; off airport; private transfers; limousines
Accommodation: motels; hotels; car park inclusive packages; transit accommodation

2 Understand the process of embarkation and the roles of airport and airline staff

Departure airport facilities: airline facilities; ground handling facilities; off-airport check in; retail outlets (tax free, non-tax free); information services; financial services; baggage trolleys; private lounges; other, eg children’s play areas, chapels
Facilities for specific needs: unaccompanied minors process; facilities for children and infants; mobility assistance, eg parking facilities, airport buggies; communication assistance, eg Braille, services for non-English speakers
Routine processing functions: online check in; automated check-in desks; manual check-in desks; security; immigration (on exit, requirements at destination); boarding cards; departure information; changes to itinerary; standby passengers
Luggage procedures: dangerous and restricted goods; import and export regulations; items not accepted in the cabin; luggage allowances (according to class, airline, type of aircraft); excess baggage charges; outsize luggage
Personnel: airline staff; ground handlers; customer service agents; baggage handling agents; security staff; immigration officers; HM Revenue and Customs officers; retail staff
Staff roles: eg checking documentation, ensuring health, safety and security, offering advice, generating sales
3 Know the facilities and services available to passengers during the flight

**Boarding:** security checks; preferential seating; provision of airbridges or steps; passengers with specific needs (physical disabilities, with children, those acting suspiciously, under the influence of alcohol, nervous flyers); cabin baggage

**On-board facilities:** classes on scheduled flights; facilities (charter airlines, low-cost airlines); extra legroom; in-flight entertainment; food and beverages; tax-free goods; telephones and internet; destination information; immigration documentation; medical assistance

**Facilities for passengers with special needs:** eg seating arrangements; toilet facilities; medical assistance; communication assistance, eg safety instructions in various formats, staff with language skills; special dietary meals

**Facilities for children:** eg infant seat belts; cots; activity packs; in-flight entertainment channels; children’s meals; bottle warming; nappy-changing facilities; unaccompanied minors

**Roles and responsibilities of personnel in flight:** giving information; health and safety; passenger welfare; medical assistance; managing passenger behaviour; sale of goods; food and beverage service

4 Know the airport and airline services and facilities during the disembarkation process

**Passport and visa requirements:** general immigration procedures (EU passengers, non-EU passengers); procedures for asylum seekers; validity requirements for EU passport holders; visas; customs

**Luggage reclaim:** passenger assistance; lost and damaged luggage procedures; outsized luggage pick-up

**Arrival facilities:** for passengers, eg car hire, currency exchange, transport; for meeting air passengers, eg arrivals information, short-stay parking; for unaccompanied minors

**Transit passengers:** passenger transfer; luggage procedures; minimum connection times; lounges; missed connection procedures
In order to pass this unit, the evidence that the learner presents for assessment needs to demonstrate that they can meet all of the learning outcomes for the unit. The criteria for a pass grade describes the level of achievement required to pass this unit.

<table>
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<tr>
<th>Grading criteria</th>
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<tbody>
<tr>
<td><strong>P1</strong></td>
<td>describe the options available to customers when travelling to and from airports and between terminals</td>
<td><strong>M1</strong> compare the facilities available at two different airports for passengers travelling to and from the airports and during the embarkation process</td>
<td><strong>D1</strong> evaluate the effectiveness of processes for handling passengers during embarkation at a specific airport, making justified recommendations for improvement</td>
</tr>
<tr>
<td><strong>P2</strong></td>
<td>describe the process for embarkation for all passengers and the role that airport and airline staff have during embarkation of customers</td>
<td><strong>M2</strong> explain the importance of providing facilities to meet specific passenger needs both on board and during the boarding process</td>
<td><strong>D2</strong> analyse the effectiveness of disembarkation processes at a UK airport.</td>
</tr>
<tr>
<td><strong>P3</strong></td>
<td>describe the boarding process</td>
<td><strong>M3</strong> explain the importance of effective disembarkation processes at UK airports.</td>
<td></td>
</tr>
<tr>
<td><strong>P4</strong></td>
<td>describe the role of staff and the facilities available for customers during a flight</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>P5</strong></td>
<td>describe the disembarkation and transit processes at UK airports.</td>
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</tr>
</tbody>
</table>
Essential guidance for tutors

Delivery

This unit requires learners to develop an overview of the different methods of transportation available to customers when travelling overseas by air, from leaving home to arriving at the destination airport. It focuses on the functional areas of airports and the many members of staff and organisations involved in making the experience a safe, efficient and convenient process for the passenger. The roles and responsibilities of the staff involved are identified and explained, as are the laws and regulations that are involved in processing air passengers. The unit pays particular attention to the facilities and services available to passengers with specific needs including those travelling with children.

A range of learning styles need to be catered for in this unit, as much of the content can be covered actively with supporting information and materials relevant to individual learners’ studies. The unit allows learners to study independently as much of the emphasis is on investigation to gain knowledge.

The unit balances research and theoretical work with practical exercises. Providing case studies focusing on particular issues and potential problems encountered by airport and airline personnel could allow learners to examine issues in depth. Learners would benefit from being involved in simulated activities and could be encouraged to present some of their findings from investigations in a formal presentation.

A visit to an international airport is essential to explore its functional areas on an airport and understand how it works. Learners could benefit from a tour of the airport and observing passengers checking in for flights. Talks from guest speakers from different airport departments at the airport are recommended, they should put particular emphasis on their job role and the regulations that both personnel and passengers have to abide by. A talk from an air cabin crew member with emphasis on in-flight service, caring for passengers, and assisting passengers with special needs and passengers travelling with children is also recommended.

Assessment

The assessment criteria shown in the grading grid can be grouped together to enable learners to expand on one criterion in order gain higher grades. The links are as follows: P1, P2, M1 and D1; P3, P4 and M2; P5, M3 and D2. Where possible learners should be encouraged and given the opportunity to meet the relevant higher grading opportunities at the same time as they attempt the appropriate pass criteria.

P1 — P2 — M1 — D1

In order to achieve P1, learners should describe all of the options available for passengers arriving at and departing from UK airports. The description could focus on one specific airport or it could be in general terms. If a specific airport is studied, learners should ensure they cover all of the essential criteria and may need to use examples from other airports in order to do this.
For P2, all aspects of the embarkation process should be included. This should include the passengers' journey from arrival at the terminal (or via remote check-in), through check-in and security and to the departure gate, including any facilities and services they may use.

For M1, learners should compare the facilities at two airports. The comparison should include what is the same and what is different about each of the airports. It should also state why these differences exist. An example of an appropriate level of response for M1 could be, ‘Airport x has self-service check-in facilities whereas airport y does not. This is because airport x has many scheduled operators that have lots of business travellers; they often don’t have luggage to check-in and may be in a hurry so they prefer to use this facility rather than wait in long queues. Airport y has mainly charter flights which means most passengers are going on holiday so they have luggage to check-in. They are not necessarily in a hurry so they don’t need these facilities’. If access to two airports is a problem, tutors could issue case studies based on a real airport for learners to use as part of their comparison.

To achieve D1, learners should demonstrate analytical and critical skills in being able to make judgements about processes at a particular airport. Learners’ responses should be insightful and show a clear understanding of how effective processes are. Learners should make realistic recommendations for improving processes. An example of an appropriate response at this level could be, ‘The airport should increase the number of screens giving flight information as there is only one in the arrivals area. At busy times, there are a lot of people crowded around it and it gets congested, which could lead to health and safety problems. Having an extra screen is a relatively small investment for the airport and it will alleviate a potentially huge problem.’

P3 — P4 — M2

For P3, learners may describe a general boarding process, or one from a specific airport.

For P4, learners should not focus on any one particular airline, but can draw on examples from airlines that they are familiar with if necessary.

For M2, learners should say why airlines provide specific facilities for passengers on board the flight and during the boarding process. This should cover a range of reasons including health, safety and security, to comply with any legislation and commercial gain.

P5 — M3 — D2

P5 assesses the learners' knowledge of the disembarkation processes. This focuses on the procedures that passengers go through from leaving the aircraft to leaving the terminal building. Learners should draw evidence from UK airports only and may focus on one airport in particular, but should be sure to include all of the essential Unit content; this may mean drawing on examples from other airports if necessary.

M3 asks learners to consider why disembarkation processes are important for a range of reasons such as security, passenger convenience and for airport efficiency. If necessary, learners could illustrate their responses with examples they have studied; they do not necessarily need to focus on one airport.
For D2, learners should focus on a particular airport, which could be one they have studied already for other assessment criteria or could be new. Evidence from this could be gathered from their own experience, from information from a guest speaker or from a given case study. An example of an appropriate level of response for D2 could be, ‘There are 12 baggage carousels at the airport which are sometimes all in use at busy times. This means that if the airport increased the number of flights at these times, it could mean longer for passengers to wait, which would be inconvenient for them and inefficient for the airport as they want to process passengers as quickly as possible’.

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

This unit links to the National Occupational Standards in Aviation (Aviation Operations on the Ground and Cabin Crew) at Level 3. It also links to the following units in the BTEC Nationals in Aviation Operations:

- **Unit 1: The Aviation Industry**
- **Unit 3: Meeting Customer Needs in the Aviation Industry**
- **Unit 12: Preparation for Working in the Aviation Industry**
- **Unit 17: Airport Operations**
- **Unit 18: Team Leadership in the Aviation Industry**
- **Unit 19: Conflict Management for Aviation.**

This unit offers progression from the Level 2 BTEC Firsts in Travel and Tourism and progression to the Level 5 BTEC Higher Nationals in Travel and Tourism Management.

Essential resources

Learners must have access to library and research facilities including the internet, airport and airline publications and airport information. Documentation relating to flying with special needs is widely available from the Department of Health and airports generally have their own policies, either in leaflet form at the airport or on the website. It is vital that learners have a visit to an airport or airports to appreciate the transport issues and facilities passengers have.

Indicative reading for learners

Textbooks

Dale G and Oliver H — *BTEC National Travel and Tourism: Student Book 1* (Heinemann, 2005) ISBN 0435446444


Website

www.homeoffice.gov.uk The Home Office
Key skills

Achievement of key skills is not a requirement of this qualification but it is encouraged. Suggestions of opportunities for the generation of Level 3 key skill evidence are given here. Tutors should check that learners have produced all the evidence required by part B of the key skills specifications when assessing this evidence. Learners may need to develop additional evidence elsewhere to fully meet the requirements of the key skills specifications.

<table>
<thead>
<tr>
<th>Communication Level 3</th>
<th>They should be able to develop the following key skills evidence:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• describing the boarding process</td>
<td>C3.1b Make a formal presentation of at least eight minutes using an image or other support material.</td>
</tr>
<tr>
<td>• describing the processes for embarkation and the role that airport and airline staff have in this process.</td>
<td>C3.3 Write two different types of documents, each one giving different information about complex subjects. One document must be at least 1000 words long.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Information and communication technology Level 3</th>
<th>They should be able to develop the following key skills evidence:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• researching the disembarkation process at UK airports</td>
<td>ICT3.1 Search for information, using different sources, and multiple search criteria in at least one case.</td>
</tr>
<tr>
<td>• describing the role of staff and the facilities available for customers in-flight.</td>
<td>ICT3.3 Present combined information such as text with image, text with number, image with number.</td>
</tr>
</tbody>
</table>
Unit 9: Air Cargo Operations

NQF Level 3: BTEC National
Guided learning hours: 60

Unit abstract

The air cargo business is a dynamic and ever-evolving worldwide industry. For the foreseeable future, Asian expansion in this field will lead the way, with new airports being designed exclusively for cargo operations. The development of similar concepts in the newer members of the European Union and the ongoing ‘open skies’ liberalisation between Europe and America will continue to fuel this expansion.

There are many reasons why shippers choose to send their goods by air. Some items such as newspapers or urgent mail need to be delivered to the other side of the world the next day. Often, during the release of an international company’s latest piece of technology, nothing but rapid worldwide delivery after its product launch will be acceptable to its customers. Similarly, the increase in manufacturers worldwide dependent on the ‘just-in-time’ approach to component supply means that, as stock is no longer stored, orders placed need to be fulfilled promptly so there is no delay on the production line.

This unit gives learners opportunities to enter the world of air cargo, and understand the requirements and responsibilities involved. The role of the freight forwarders will also be investigated, together with the range of services they offer. Learners will examine the latest cargo terminal designs, together with the latest aircraft cargo handling technology.

Learning outcomes

On completion of this unit a learner should:

1 Know the requirements and responsibilities of the shipper
2 Understand the role of the freight forwarder in the air cargo market
3 Know the operational procedures and processes of airlines and airport handling companies at export
4 Understand the operational procedures and processes of airlines and airport handling companies at import.
Unit content

1 **Know the requirements and responsibilities of the shipper**

   **Responsibilities of the shipper:** examination of packing; marking; labelling requirements and associated documentation, eg shipper’s declaration, customs declarations, insurance; arrangements for special cargo, eg human remains, dangerous goods, time critical goods

   **Factors that influence demand for shippers:** cost; speed; frequency; security; emergency; routine perishable goods; routine non-perishable goods

2 **Understand the role of the freight forwarder in the air cargo market**

   **Freight forwarders:** major companies; size and scope of operations, international operations; their impact, eg on airline revenues

   **Type of freight forwarder:** International Air Transport Association (IATA) agents; non-IATA agents; specialists; consolidators; wholesalers

   **Services offered:** export documentation; pick-up; delivery; reservations; import brokerage; customs clearance

   **Automated procedures:** electronic data interface (EDI); supply chain management; automated customs clearance; cargo community systems (CCS); palletised systems

3 **Know the operational procedures and processes of airlines and airport handling companies at export**

   **Acceptance and terminal handling:** check-weighing; documentation (normal procedures, dangerous goods); staging; manifesting; flight preparation; bulk loading; unit load devices (ULDs); terminal automation (radio frequency, barcoding, elevated transfer vehicles)

   **Terminal design:** landside and airside operations; storage; staging; build-up and breakdown requirements; special load considerations

   **Ramp handling:** bulk and ULD loading; elevated transfer vehicles

   **Aircraft configuration:** wide bodied; narrow bodied; combis; freighters; mass and balance considerations
4 Understand the operational procedures and processes of airlines and airport handling companies at import

_Aircraft offloading procedures:_ processes; special cargo; bulk cargo; ULDs; mail; time critical goods; elevated transfer vehicles

_Inbound terminal processing:_ notification of arrival; breakdown; storage; transfer staging; special cargo; dangerous cargo

_Customs clearance:_ inbound clearance procedures (manual, automated); documentation; freight inspection; out of charge notes; bond transfers; notification of delivery; import terminal charges
In order to pass this unit, the evidence that the learner presents for assessment needs to demonstrate that they can meet all of the learning outcomes for the unit. The criteria for a pass grade describes the level of achievement required to pass this unit.

<table>
<thead>
<tr>
<th>Grading criteria</th>
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<tr>
<td><strong>To achieve a pass grade the evidence must show that the learner is able to:</strong></td>
<td><strong>To achieve a merit grade the evidence must show that, in addition to the pass criteria, the learner is able to:</strong></td>
</tr>
<tr>
<td><strong>P1</strong> describe the responsibilities of the shipper for normal and special cargoes</td>
<td><strong>M1</strong> explain why shippers choose to send their goods by air</td>
</tr>
<tr>
<td><strong>P2</strong> describe the factors that influence demand for shippers</td>
<td><strong>M2</strong> analyse the services offered by freight forwarders and the impact of the use of automated procedures</td>
</tr>
<tr>
<td><strong>P3</strong> describe the different types of freight forwarders and the services they offer, including automated procedures</td>
<td><strong>M3</strong> explain the design requirements of an air cargo terminal dealing with importing and exporting goods.</td>
</tr>
<tr>
<td><strong>P4</strong> describe the operational procedures and processes of airlines and airport handling companies including the airport terminal requirements at export</td>
<td></td>
</tr>
<tr>
<td><strong>P5</strong> describe the operational procedures and processes of airlines and airport handling companies including the airport terminal requirements at import.</td>
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</tbody>
</table>
Essential guidance for tutors

Delivery

This unit gives learners an overview of the air cargo business and a level of knowledge and understanding sufficient for them to enter the industry in an operational role.

The concept of air cargo needs to be explored initially as it is likely that many learners will have had no experience of this prior to commencing this unit. Initial investigation into the reasons why shippers choose the air option should be followed by the methods used to arrange for the transportation of goods by air. An insight into the challenges and very strict rules and regulations of dealing with special cargoes, for example live animals and dangerous goods, should be included as this theme occurs several times in this unit. Learners should understand how the procedures involved may differ from normal cargo in respect of documentation, eg Notification to the Aircraft Captain and general COSHH regulations. It may be beneficial for learners to undertake some of the study for this unit alongside Unit 2: Health Safety and Security in the Aviation Industry.

Learners should gain a clear understanding of the role of the freight forwarder in respect of handling cargo operations and their relationship with airlines and airport handling agents. This may be best explored using case studies either directly from industry or compiled by the tutor.

A visit to an air cargo terminal would be highly beneficial, so learners can see real processes in action. A starting point would be with local business and freight handling contacts.

Learners could be invited to form hypothetical businesses, and then investigate the shipping options. In groups, learners could briefly compare rail, road, sea and air before performing detailed analysis of the capabilities and costs of the aviation options. As there are a number of main players in the air cargo business, tutors could divide their learners into small groups to explore the brochures and websites of different organisations within the sector.

When looking at the design of cargo terminals, computer aided design (CAD) could be employed as part of a group project.

Airlines or airport handling companies that deal with cargo could be invited to speak to learners about the procedures that they undertake at export and import and the challenges that arise from these. Ideally, talks should focus on new technologies that are currently deployed by the industry and its impacts on their operations.

Where airside visits are not possible, learners should have access to photographs of different types of aircraft and associated loading equipment in order that they can get a feel for the procedures in operation.
Assessment

The assessment criteria shown in the grading grid can be grouped together to enable learners to expand on one criterion in order to gain higher grades. The links are as follows: P1, P2, M1 and D1; P3 and M2; P4, P5, M3 and D2. Where possible learners should be encouraged and given the opportunity to meet the relevant higher grading opportunities at the same time as they attempt the appropriate pass criteria.

**P1 — P2 — M1 — D1**

The evidence produced for P1 must describe the responsibilities of the shipper, demonstrating a clear understanding of all the processes involved for normal and special cargoes, including packing, marking, labelling requirements and associated documentation. It is expected that learners will discuss the documentation required including shipper’s declarations, customs declarations and insurance. The requirements for special cargoes should be described and the following should be included within the description: dangerous goods; live animals; human remains; valuables; time critical goods.

A description of the factors that influence demand for shippers will provide evidence for P2. The issues of speed of delivery, frequency, cost, security, emergency handling, routine perishable and non-perishable goods should be included. Evidence for P2 can be extended for M1 by explaining why customers choose the air option and giving at least three examples, eg commercial (new product launch, parts supply for production line, perishable goods) and personal (moving house/business). D1 can be satisfied by learners going on to evaluate the benefits and costs of sending goods by air over other methods of transportation.

**P3 — M2**

For P3, the learner is expected to describe different types of freight forwarder including IATA and non-IATA agents, specialists, consolidators and wholesalers. Included in this range should be at least two of the major players who have international operations and at least two others. Learners should describe the size and scope of the operation, the international operations, and the impact of freight forwarders, eg on airline revenues. A description of their services should be provided, including export documentation, pick-up, delivery, reservations, import brokerage and customs clearance. Automated procedures should be described, including palletised systems, electronic data interface (EDI), supply chain management, automated customs clearance and cargo community systems (CCS).

For M2, the learner should expand the evidence of P3 to analyse the range of services offered by freight forwarders and investigate the impact of the latest automated systems. Examples of specific or generic operators should be given.

**P4 — P5 — M3 — D2**

For P4, learners need to describe airlines’ and airport handlings companies’ operational export procedures and processes and should include the full range of the **Unit content** in relation to: acceptance and terminal handling; terminal design; ramp handling; and aircraft configuration. It is suggested that learners describe these operational procedures and processes for two different types of cargo, from acceptance at the terminal through to loading on the aircraft.
UNIT 9: AIR CARGO OPERATIONS

For P5, learners should describe the airlines’ and airport handling companies’ operational import procedures and processes and should include the full range of the Unit content in relation to: aircraft offloading procedures; inbound terminal processing; and customs clearance. It is suggested that learners describe these operational procedures and processes for two different types of cargo, offloading from aircraft to inbound terminal processing and customs clearance.

For M3, evidence should be expanded to explain fully the design requirements of an air cargo terminal. Learners can base their explanation on either one real or hypothetical example. The theme may then be extended to provide evidence for D2 by evaluating the impact of inefficient terminal design and the effects of poor processes and procedures. Learners should give at least three examples of the results of inefficiency in terms of material and financial costs to the customer.

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

This unit links to the National Occupational Standards in Aviation (Aviation Operations on the Ground) at Level 3. It also links to the following units in the BTEC Nationals in Aviation Operations:

- Unit 1: The Aviation Industry
- Unit 2: Health, Safety and Security in the Aviation Industry
- Unit 5: Aircraft Operations
- Unit 10: Airport Ramp Handling
- Unit 11: Aircraft and Airfield Performance
- Unit 12: Preparation for Working in the Aviation Industry
- Unit 15: Airport Emergency Operations.

This unit offers progression from the Level 2 BTEC Firsts in Travel and Tourism and progression to the Level 5 BTEC Higher Nationals in Travel and Tourism Management.

Essential resources

Learners should be able to visit an air cargo terminal or have access to accurate and up-to-date industry case studies in air cargo operations.

Indicative reading for learners

Textbook


Websites

www.bifa.org The British International Freight Association (BIFA)
www.hmrc.gov.uk HM Revenue and Customs
Achievement of key skills is not a requirement of this qualification but it is encouraged. Suggestions of opportunities for the generation of Level 3 key skill evidence are given here. Tutors should check that learners have produced all the evidence required by part B of the key skills specifications when assessing this evidence. Learners may need to develop additional evidence elsewhere to fully meet the requirements of the key skills specifications.

### Communication Level 3

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<tr>
<td>• describing the operational procedures and processes of airlines and the airport terminal requirements at import and export.</td>
<td>C3.3 Write two different types of documents each one giving different information about complex subjects. One document must be at least 1000 words long.</td>
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### Information and communication technology Level 3

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<td>ICT3.1 Search for information using different sources, and multiple search criteria in at least one case.</td>
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<tr>
<td>• describing the responsibility of the shipper for normal and special cargo.</td>
<td>ICT3.3 Present combined information such as text with image, text with number, image with number.</td>
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Unit 10: Airport Ramp Handling

NQF Level 3: BTEC National
Guided learning hours: 60

Unit abstract

The on-time departure of a fully laden commercial airliner is an important element to the aviation industry, and requires a well-coordinated effort from all involved. This unit looks at the key elements of ramp handling, a dynamic centre of operations where each arriving aircraft offers new challenges.

The turnaround of a low-cost operator’s Boeing or Airbus approaches the pace of a Grand Prix car’s pit stop, with commercial pressure adding an extra dimension to this already complex and demanding scenario.

The safe, efficient and timely completion of a commercial airliner’s turnaround demands the total integration of many disparate agencies’ activities. As well as achieving the safe embarkation and disembarkation of passengers and cargo, the aircraft has to be technically checked, refuelled and serviced.

Learners will gain an understanding of the air traffic control (ATC) procedures involved and knowledge of the terminology used. The learners will become familiar with the airside procedures and marshalling disciplines that ensure the safe movement of aircraft.

Learners will investigate the pressures applied to groundcrew and aircrew alike, in the form of ATC ‘slots’ and ambient weather conditions. The implications of ineffective teamwork and equipment failures are also analysed.

The ramp is an extremely unforgiving environment, and this unit investigates the regulatory framework that helps maintain the industry’s enviable safety record.

Learning outcomes

On completion of this unit a learner should:

1. Understand the aircraft turnround operation and the importance of efficiency
2. Know air traffic control procedures employed and their relationship with ramp handling
3. Know the requirements and methods for aircraft loading in relation to both cargo and passenger handling
4. Understand the regulatory framework and safety issues associated with work on the ramp.
UNIT 10: AIRPORT RAMP HANDLING

Unit content

1 Understand the aircraft turnaround operation and the importance of efficiency

Aircraft turnaround operations: inspection; rectification of defects found in technical log; line maintenance; refuelling (earthing, ground refuelling points, identification of under- and over-wing refuelling); matching aircraft type to ground power requirements; signalling and safety issues (pushback/powerback operations); coordination (air traffic control, pilot, ground handler); role of dispatcher; methods of de-icing; relevance of holdover duration; aircraft servicing (cleaning, catering, toilet); sequence of operations

Efficiency: of turnrounds (slot times, cost factors); the timing of each operation; need for preparation; importance of teamwork and co-operation; barriers (weather, inaccurate communications, breakdown or mismatch of equipment)

2 Know air traffic control procedures employed and their relationship with ramp handling

Air traffic control procedures: role and function of air traffic control; radio-telephony procedures; the use of the phonetic alphabet; frequencies and relevance (tower, ground, Air Traffic Information Service (ATIS)); aircraft movement (marshalling, taxiing, parking of aircraft)

Relationship with ramp handling: importance of following established procedures; potential safety hazards; security issues; requirement of disclosure vetting for airside passes

3 Know the requirements and methods for aircraft loading in relation to both cargo and passenger handling

Requirements for aircraft loading: calculation of mass and balance; awareness (floor loading, aircraft weight limitations); purpose (loadsheets, balance charts, air-way bills)

Cargo handling: loading and unloading methods, eg roller loading, use of forklift, palletised loads; types of cargo, eg livestock, containerised freight, mail; handling of dangerous cargo; securing methods; cargo priorities; notice to air captain (NOTOC); control of substances hazardous to health (COSHH)

Passenger handling: boarding and disembarkation methods, eg steps, airbridge, remote parking; dealing with special needs passengers, eg unaccompanied minors, wheelchair users, passengers with young children
4 Understand the regulatory framework and safety issues associated with work on the ramp

Regulatory framework: Health and Safety at Work Act; European directives; Health and Safety Executive (role, powers); airport bylaws concerning parking; passage of traffic on ramp and runways

Safety issues: foreign object damage; dangers of noise and blast; security of baggage and passengers; baggage manifests; rush bags; accompanied baggage
### Grading grid

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

<table>
<thead>
<tr>
<th>Grading criteria</th>
<th>To achieve a pass grade the evidence must show that the learner is able to:</th>
<th>To achieve a merit grade the evidence must show that, in addition to the pass criteria, the learner is able to:</th>
<th>To achieve a distinction grade the evidence must show that, in addition to the pass and merit criteria, the learner is able to:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>P1</strong> describe the operational procedures used during an aircraft turnaround and issues affecting efficiency</td>
<td><strong>M1</strong> analyse the importance of efficiency in the turnaround of an aircraft</td>
<td><strong>M2</strong> compare the operations and issues involved with handling passengers and cargo during an aircraft turnaround</td>
<td><strong>D1</strong> evaluate the effectiveness of the operational turnaround procedures and the implications of poor efficiency</td>
</tr>
<tr>
<td><strong>P2</strong> describe the air traffic control procedures employed during an aircraft turnaround and their relationship with ramp handling</td>
<td><strong>M3</strong> explain the importance of working within the regulatory framework to minimise dangers involved in an aircraft turnaround.</td>
<td></td>
<td><strong>D2</strong> evaluate the effectiveness of operational procedures for the safety of passengers, crew, cargo and staff.</td>
</tr>
<tr>
<td><strong>P3</strong> explain the requirements for loading cargo</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>P4</strong> explain the requirements for the embarkation and disembarkation of passengers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>P5</strong> describe the regulatory framework and safety issues associated with work on the ramp.</td>
<td></td>
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</table>
Essential guidance for tutors

Delivery

This unit provides a basis of knowledge and understanding of the procedures that take place during an aircraft turnround. Initially introduced individually, the various activities are then shown as part of the whole operation’s orchestration, with the importance of their interdependencies highlighted.

Ramp handling is very much a hands-on activity, with most workers involved in manual labour and dealing with operational issues. Ideally, learners should be able to visit airside on at least one occasion to see a ramp in operation. Although commercial airports are becoming less user-friendly for visitors owing to understandable security issues, a visit would prove highly beneficial. Even if ‘airside’ access is not feasible, viewing of the ramp and turnround operations will assist learners in their appreciation of airside operations.

Additionally tutors will need to develop several example scenarios, case histories and role plays to both highlight and empathise the criticality, depth and variety of the work. Also, guest speakers from airside operations or air traffic control can greatly enhance learners’ understanding of activities on the ramp.

The dangers of this working environment and the importance of the regulatory framework should be stressed throughout this unit. A key aspect of health and safety on the ramp is to ensure that each individual activity, eg refuelling, loading etc are timed and sequenced so as not to interfere with each other. Learners could develop and understanding of this by performing a task where they have to work out the correct order of ramp operations based on information given in a scenario.

Many learners may have had some exposure to aviation, and there is a growing wealth of related video/DVD information available. Most sizeable airports produce their own promotional and training videos and DVDs relating to ramp operations, covering subjects such as health and safety. These may be available for loan or purchase.

Case study material can be used to stimulate class discussions, and newspaper articles on recent events at airports can form the basis for analysis of ramp procedures.

This unit 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.

Assessment

The assessment criteria shown in the grading grid can be grouped together to enable learners to expand on one criterion in order to gain higher grades. The links are as follows: P1, P2, M1 and D1; P3, P4 and M2; P5, M3 and D2. Where possible learners should be encouraged and given the opportunity to meet the relevant higher grading opportunities at the same time as they attempt the appropriate pass criteria.
P1 – P2 – M1 – D1

For P1, learners should describe the turnaround requirements and procedures, including the importance of efficiency. Learners should include at least four examples of defects and how they might be rectified; perhaps taking the procedure chronologically, starting with the inspection of the aircraft and the rectification of faults reported in the technical log (e.g., worn mainwheel tyre discovered during pilot’s walkround, an unserviceable cockpit instrument reported from the inbound flight, and a piece of galley equipment needing replacement when next at one of the airline’s base airports).

Aspects of line maintenance should be described, including the importance of toilet dumping and carrying out any periodic maintenance that would fall due during the aircraft’s next sectors before returning to base. The need to calculate fuel requirements according to payload and weather conditions should be described and the learner should detail refuelling procedures, including earthing requirements, the use of ground refuelling points and identification of under- and over-wing refuelling. The description of operational aspects should include: matching aircraft type to ground power requirements; pushback/powerback operations and coordination (ATC, pilot and ground handler) including the role of the dispatcher; de-icing methods and the relevance of timing (e.g., timing the aircraft’s de-icing to facilitate the slot departure time within the holdover period); aircraft servicing including cleaning, catering, and toilet dumping.

The efficiency issues should be clearly described, with examples of operational and commercial issues (e.g., poor weather approaching the airport, operating crew running out of duty time). It is recommended that learners should be guided to include all the above under relevant sub-headings, e.g., Technical Log, Line Maintenance, Refuelling, Power, De-icing, Aircraft Servicing.

P2 requires a description of the air traffic control procedures used in turnaround operations and the way in which these procedures facilitate safe and efficient ramp handling. The learner should describe the role and function of air traffic control, together with examples of the radiotelephony procedures used, including instructions passed to pilots and marshals for the taxiing and parking of aircraft, frequencies used, Air Traffic Information Service, the use of the phonetic alphabet. The learner should describe the relationship that exists between ATC and the ramp handling agencies in relation to the importance of using correct procedures, including potential safety hazards, security issues, and disclosure vetting for all airside staff.

Evidence for P1 and P2 can be extended to meet the requirements of M1 by explaining the importance of efficiency during turnaround operations, including the relevance to slot times and costs; timing and preparation; teamwork and cooperation; and potential problems (weather, inaccurate communications, breakdown/mismatch of equipment). This criterion differs from P1 in that rather than describing what is meant by efficiency, learners should say why efficiency is particularly important in aircraft turnaround.

For D1, learners must evaluate the effectiveness of the turnaround procedures and give at least three examples of the implications of poor efficiency (e.g., inaccurate communications leading to delays, equipment breakdown, mismatch of equipment).
P3 — P4 — M2

For P3, learners must explain the requirements for loading cargo in relation to calculation of mass and balance; awareness of floor loading and aircraft mass limitations; and the purpose of loadsheets, balance charts and air-way bills. Learners should explain the use of two different loading and unloading methods (eg roller loading, palletised loads) and of how to deal with three different types of cargo (eg containerised cargo, mail, livestock), one of which should be classed as dangerous cargo. Learners should include an explanation of securing methods for the above.

For P4, learners must explain the requirements for passenger handling during embarkation and disembarkation in relation to the use of three different methods (eg steps, airstairs, airbridge). Learners should include an explanation of dealing with three different types of passenger with special needs (eg unaccompanied minors, wheelchairs, pushchairs, stretcher cases).

For M2, learners combine their evidence for P2 and P3, drawing comparisons between the handling of passengers and cargo ie explaining some of the similarities as well as the differences and stating why these exist.

P5 — M3 — D2

P5 requires learners to describe the regulatory framework associated with work on the ramp. Learners should include: the Health and Safety at Work Act 1974; the role and powers of the Health and Safety Executive; airport bylaws concerning parking; passage of traffic on ramp and runways; variance between two different airports. Learners should describe safety issues associated with work on the ramp including: foreign object damage; dangers of noise and blast; security of baggage and passengers; dealing with terrorism.

The evidence for P5 can be extended to meet the requirements of M3 by explaining the importance of working within the regulatory framework to minimise the dangers involved in an aircraft turnaround. Learners should provide at least four examples, eg the dangers of noise and blast to ground personnel and transiting passengers, fuel spillage.

For D2, learners must evaluate the effectiveness of operational procedures in place on the ramp in relation to safety of passengers, crew, cargo and staff. Accident statistics could form a useful gauge to effectiveness, with perhaps a comparison with other high-risk industries.
Links to National Occupational Standards, other BTEC units, other BTEC qualifications and other relevant units and qualifications

This unit links to the National Occupational Standards in Aviation (Aviation Operations on the Ground) at Level 3. It also links to the following units in the BTEC Nationals in Aviation Operations:

- Unit 1: The Aviation Industry
- Unit 5: Aircraft Operations
- Unit 9: Air Cargo Operations
- Unit 11: Aircraft and Airfield Performance
- Unit 12: Preparation for Working in the Aviation Industry
- Unit 15: Airport Emergency Operations
- Unit 17: Airport Operations.

This unit offers progression from the Level 2 BTEC Firsts in Travel and Tourism and progression to the Level 5 BTEC Higher Nationals in Travel and Tourism Management.

Essential resources

Learners should have the opportunity to visit an airport to see ramp operations at first hand.

Indicative reading for learners

Textbook


Website

www.caa.co.uk

The Civil Aviation Authority
Key skills

Achievement of key skills is not a requirement of this qualification but it is encouraged. Suggestions of opportunities for the generation of Level 3 key skill evidence are given here. Tutors should check that learners have produced all the evidence required by part B of the key skills specifications when assessing this evidence. Learners may need to develop additional evidence elsewhere to fully meet the requirements of the key skills specifications.

Communication Level 3

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</tr>
<tr>
<td>• researching the regulatory framework associated with work on the ramp</td>
<td>C3.2 Read and synthesise information from at least two documents about the same subject. Each document must be a minimum of 1000 words long.</td>
</tr>
<tr>
<td>• describing the air traffic control procedures employed during an aircraft turnaround and their relationship to ramp handling.</td>
<td>C3.3 Write two different types of documents each one giving different information about complex subjects. One document must be at least 1000 words long.</td>
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Information and communication technology Level 3

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<td>ICT3.1 Search for information using different sources, and multiple search criteria in at least one case.</td>
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<td>ICT3.3 Present combined information such as text with image, text with number, image with number.</td>
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Unit 11: Aircraft and Airfield Performance

NQF Level 3: BTEC National
Guided learning hours: 60

Unit abstract

Meeting the standards of aircraft and airfield performance is vital to the safety of the aircraft, passengers and crew from take off to landing. It also ensures fuel efficiency and economy for the airline. Within such a competitive industry this has become one of the most important factors. This unit will introduce learners to the need for good aircraft and airfield performance and how to meet the needs of the airline.

Learners will explore the safety factors throughout the various stages of flight from take off to landing at the destination airport. They will also investigate the legal requirements that apply to aircraft and airfield performance, and be able to source documents for these requirements and learn to extract the required information.

Taking off and landing masses need to be calculated to ensure safe operation of the aircraft. Learners will understand key terms associated with these and how they are applied in aviation.

The unit will also cover the principles of obstacle clearance at all stages of an aircraft’s flight. The learners will be able to define the terms associated with obstacle clearance and understand the calculations that are required in order to ascertain safe performance at all times.

This unit links closely with Unit 5: Aircraft Operations.

Learning outcomes

On completion of this unit a learner should:

1 Understand the principles of aircraft and airfield performance
2 Know the legal requirements for despatch of an aircraft operating under ICAO, JAA and UK CAA rules
3 Understand the terms ‘take-off mass’ and ‘landing mass’ and their effects on aircraft performance
4 Understand the principles of obstacle clearance.
Unit content

1 Understand the principles of aircraft and airfield performance

Principles of flight and power: the four forces on an aircraft in flight (mass, lift, drag, thrust); Newton’s laws of action and reaction; Bernoulli’s theorem; engine performance (jet aircraft, propeller aircraft); turbine engines, eg propulsive efficiency, thermal efficiency, power curves, compressibility and the speed of sound; International Standard Atmosphere (ISA); physical properties of air, eg temperature, air density, altitude

Factors affecting take-off performance: airfield elevation; take-off mass; temperature; surface wind; altitude; runway (length, slope, condition); wind component; cross winds; speeds, eg decision speed V_1, rotation speed V_r, take-off safety speed V_2; relationships between air speeds, eg indicated airspeed (IAS), calibrated airspeed (CAS), equivalent airspeed (EAS), true airspeed (TAS)

Declared distances: take-off run available (TORA); accelerated stop distance available (ASDA); take-off distance available (TODA); emergency distance available (EMDA); landing distance available (LDA)

Performance after take off: climb performance (jet aircraft, propeller aircraft); avoidance of obstacles

Factors affecting landing performance: eg aircraft approach, touchdown point, retarding forces, aircraft mass, altitude, temperature, wind, runway slope

Modification to basic performance: eg reduced thrust take off, operation from precipitation-covered runways

2 Know the legal requirements for despatch of an aircraft operating under ICAO, JAA and UK CAA rules


Legal Certificate of Airworthiness: maximum authorised take-off mass (MTOM)

3 Understand the terms ‘take-off mass’ and ‘landing mass’ and their effects on aircraft performance

Take-off mass: definition of terms, eg maximum authorised take-off mass (MTOM), regulated take-off mass (RTOM)

Landing mass: definition of terms, eg maximum authorised landing mass, landing field length, landing distance required, temperature, landing speeds, alternate airfield, runway contamination, abnormal configurations, location of touch down point, ground roll
4 Understand the principles of obstacle clearance

*Obstacle clearance at take off:* airfield domain; CAP 168; clearways; the obstacle free zone (OFZ)

*Obstacle clearance en route:* eg loss of one engine, loss of two engines, fuel jettison, twin-engined aircraft, drift down procedure

*Obstacle clearance on landing:* eg approach surface, instrument approach requirements, air traffic control, temporary obstacles
In order to pass this unit, the evidence that the learner presents for assessment needs to demonstrate that they can meet all of the learning outcomes for the unit. The criteria for a pass grade describes the level of achievement required to pass this unit.

### Grading criteria

<table>
<thead>
<tr>
<th>To achieve a pass grade the evidence must show that the learner is able to:</th>
<th>To achieve a merit grade the evidence must show that, in addition to the pass criteria, the learner is able to:</th>
<th>To achieve a distinction grade the evidence must show that, in addition to the pass and merit criteria, the learner is able to:</th>
</tr>
</thead>
<tbody>
<tr>
<td>P1 describe the principles of aircraft and airfield performance</td>
<td>M1 explain the importance of legal requirements on despatch for aircraft operating under ICAO, JAA and UK CAA Standards</td>
<td>D1 analyse the advantages of using reduced-thrust take-off techniques, using examples where appropriate</td>
</tr>
<tr>
<td>P2 summarise the legal requirements for despatch of aircraft under ICAO, JAA and UK CAA Standards</td>
<td>M2 explain in detail how obstacle clearance requirements affect take-off mass.</td>
<td>D2 analyse the detrimental effects of contamination on runways on the take-off and landing performance capabilities, using examples where appropriate.</td>
</tr>
<tr>
<td>P3 describe the principles of take-off and landing mass</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P4 describe the principles of obstacle clearance.</td>
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</tbody>
</table>
Essential guidance for tutors

Delivery

This unit has a high degree of theoretical input, requiring research and discussion from learners. They must be able to access the documents mentioned in the Unit content. This unit would benefit from talks from a pilot an experienced airfield operations controller or flight despatch briefing officer.

At the time of writing, the rules and procedures for aircraft performance are to be found in ICAO Annexe 6, Chapter 5; JAR Ops 1; and in the UK, CAPS 385 and 551, which have been altered to follow JAR protocols. As with all technical specifications and protocols, these may be updated from time to time. Tutors should ensure they teach the most up-to-date versions of these regulations.

As learners may be new to many of the scientific principles involved with the principles of flight, tutors could use seminars for the delivery of much of this unit. Tutors could give learners the salient facts of a theory, such as the ‘four forces on an aircraft’ and learners could then do some basic research and put together a short seminar paper, which they then deliver to other learners. This will help individual learners develop their own understanding and their peers may benefit from hearing scientific theories from a ‘non-expert’ point of view.

Assessment

The assessment criteria shown in the Grading grid can be grouped together to enable learners to expand on one criterion in order to gain higher grades. The links are as follows: P1, P2, M1 and D1; P3, P4, M2 and D2. Where possible learners should be encouraged and given the opportunity to meet the relevant higher grading opportunities at the same time as they attempt the appropriate pass criteria.

Group activities may lend themselves to certain themes or assessments, but all learners must keep a portfolio of their own work and have evidence of individually covering all the criteria for which they are credited. Much of the content of this unit involves scientific formulae, calculations and regulations. Assignments should be written in such a way that learners are discouraged from merely reproducing these in their portfolio work. It is essential that all assessment evidence is in learners’ own words, with commentary and examples added where appropriate.

P1 — P2 — M1 — D1

To achieve P1, learners must describe the principles of aircraft and airfield performance. Coverage must include all of the content for the outcome. Where calculations are relevant they should be incorporated into descriptions as an illustration but should not replace a description in words.
To achieve P2, learners should summarise legal requirements, showing a clear knowledge and understanding of the subject. Learners should summarise rather than list the contents of the various regulations. They should summarise in their own words what each regulation means for the despatch of aircraft. It may be useful for learners to be given an assignment where they have to explain these regulations to someone with no experience of the industry or aircraft performance; this will ensure that their summaries are clear and free from too much unnecessary technical jargon where.

For M1, the importance of legal requirements should be explained in terms of how they affect aircraft despatch. For D1, learners should provide a sample comparison, if possible, between a full-power take-off calculation and a reduced thrust one.

P3 — P4 — M2 — D2

To achieve P3, learners should describe the principles of take-off and landing mass. This should include calculations as part of the general description but should not read as a list of formulae with no descriptions. To meet the requirements of P4 learners must describe the principles of obstacle clearing; this may be at a basic level for this criterion.

To achieve M2, learners should explain in detail how obstacle-clearing requirements affect take-off mass. For D2, learners should provide an analysis of the detrimental and retardation effects of contamination on a runway, such as standing water, dry snow or slush, and provide examples.

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

This unit links to the National Occupational Standards in Aviation (Aviation Operations on the Ground) at Level 3. It also links to the following units in the BTEC Nationals in Aviation Operations:

- **Unit 1: The Aviation Industry**
- **Unit 5: Aircraft Operations**
- **Unit 9: Air Cargo Operations**
- **Unit 10: Airport Ramp Handling**
- **Unit 12: Preparation for Working in the Aviation Industry**
- **Unit 15: Airport Emergency Operations.**

This unit offers progression from the Level 2 BTEC Firsts in Travel and Tourism and progression to the Level 5 BTEC Higher Nationals in Travel and Tourism Management.
Essential resources

Learners should have access either electronically or on paper to the following documents:

- CAP168 Licensing of Aerodromes
- CAP032 AIP UK Aeronautical Information Publication
- CAP360 Part 1 — Air Operators Certificate — Operation of Aircraft
- CAP393 Air Navigation: The Order and Regulations
- CAP455 Airworthiness Notices
- CAP562 Civil Aircraft Airworthiness Information and Procedures
- BCAR’s Airworthiness Information Leaflet, available via the Civil Aviation Authority website or HMSO ISBN 1904862578.

Indicative reading for learners

Textbooks


Stanley S — *Flying the Big Jets* (ARB, 2000) ISBN 1840374225

Journals and trade publications

*Flight International* — Reed Business Publications

Websites

- [www.caa.co.uk](http://www.caa.co.uk) Civil Aviation Authority
- [www.jaa.nl](http://www.jaa.nl) Joint Aviation Authorities
Achievement of key skills is not a requirement of this qualification but it is encouraged. Suggestions of opportunities for the generation of Level 3 key skill evidence are given here. Tutors should check that learners have produced all the evidence required by part B of the key skills specifications when assessing this evidence. Learners may need to develop additional evidence elsewhere to fully meet the requirements of the key skills specifications.

### Communication Level 3

<table>
<thead>
<tr>
<th>When learners are:</th>
<th>They should be able to develop the following key skills evidence:</th>
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<tbody>
<tr>
<td>• identifying the principles of take-off and landing mass</td>
<td>C3.1a Take part in a group discussion.</td>
</tr>
<tr>
<td>• describing the principles of obstacle clearance</td>
<td>C3.1b Make a formal presentation of at least eight minutes using an image or other support material.</td>
</tr>
<tr>
<td>• researching the legal requirements for despatch of aircraft</td>
<td>C3.2 Read and synthesise information from at least two documents about the same subject. Each document must be a minimum of 1000 words long.</td>
</tr>
<tr>
<td>• describing the principles of scheduled aircraft performance.</td>
<td>C3.3 Write two different types of documents each one giving different information about complex subjects. One document must be at least 1000 words long.</td>
</tr>
</tbody>
</table>

### Information and communication technology Level 3

<table>
<thead>
<tr>
<th>When learners are:</th>
<th>They should be able to develop the following key skills evidence:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• researching the legal requirements for despatch of aircraft</td>
<td>ICT3.1 Search for information using different sources, and multiple search criteria in at least one case.</td>
</tr>
<tr>
<td>• describing the principles of obstacle clearance.</td>
<td>ICT3.3 Present combined information such as text with image, text with number, image with number.</td>
</tr>
</tbody>
</table>
Unit 12: Preparation for Working in the Aviation Industry

NQF Level 3: BTEC National
Guided learning hours: 60

Unit abstract

Every day millions of people are transported across the world by a highly organised, efficient and technically advanced industry. International barriers, time zones and cultural differences are overcome as the airline industry transports business passengers, tourists, workers and freight across the globe.

In such a highly competitive industry, it is essential that only those applicants with the best-suited skills and attributes are employed.

There are a wide range of employment opportunities available in aviation from those in the public view such as cabin crew and reservations staff, to those who work behind the scenes such as dispatchers and airfield maintenance staff. Learners will find out about these employment opportunities, including their entry requirements and where to find out more about them.

This unit will enable learners to recognise their skills and attributes and match them with their career aspirations. It will also encourage and direct them to improve upon and develop their personal skills in order to achieve their career aspirations.

The unit will culminate with learners preparing for employment. Documentary, interview and presentation skills are reviewed. Learners will undergo a simulated interview process.

Learning outcomes

On completion of this unit a learner should:

1. Know employment opportunities in the aviation industry
2. Know the areas for own personal development in preparation for employment in aviation
3. Be able to carry out the procedures involved in preparation for employment in the aviation industry
4. Be able to participate in the interview and selection process.
Unit content

1 Know employment opportunities in the aviation industry

*Job roles:* airlines, eg cabin crew, reservation agents; airports, eg information assistant, airfield maintenance; handling agents, eg check-in agent, dispatcher

*Entry requirements:* qualifications, eg NVQ; skills, eg foreign language; qualities, eg confident; other requirements, eg height, location

*Sources of information:* eg careers advisors, internet sites, trade publications, educational establishments, sector skills council (SSC)

2 Know the areas for own personal development in preparation for employment in aviation

*Own qualifications:* academic; vocational; records of achievement; professional development

*Own experience:* employment (paid, voluntary); leisure; courses attended

*Own skills and attributes:* eg communication, numeracy, ICT, teamwork, timekeeping, self-motivation, reliability, integrity, honesty

*Career development:* aims; aspirations; types of aviation careers; requirements for the job role; personal suitability for job role

*Personal audit:* strengths; weaknesses; consultations (tutors, peers, careers staff)

3 Be able to carry out the procedures involved in preparation for employment in the aviation industry

*Documents:* letter of application; personal statement; curriculum vitae (CV); application form

*Research:* organisation; job role

4 Be able to participate in the interview and selection process

*Interview skills:* personal presentation; first impressions; personality; appearance; attitude; body language; communication skills; time keeping; self motivation; active listening; question and answer preparation; group interaction

*Interview:* individual; group; presentation; telephone

*Selection procedures:* eg psychometric testing, numeracy, literacy, general knowledge, current affairs, aviation geography, language test, verbal reasoning
In order to pass this unit, the evidence that the learner presents for assessment needs to demonstrate that they can meet all of the learning outcomes for the unit. The criteria for a pass grade describes the level of achievement required to pass this unit.

<table>
<thead>
<tr>
<th>Grading criteria</th>
<th>To achieve a pass grade the evidence must show that the learner is able to:</th>
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</tr>
</thead>
<tbody>
<tr>
<td>P1</td>
<td>describe employment opportunities in the aviation industry, using appropriate sources of information</td>
<td>M1 explain how own qualifications, skills and attributes are appropriate for specific job roles in the aviation industry</td>
<td>D1 assess their personal audit against an aviation job role evaluating their strengths and weaknesses and making recommendations for improvement</td>
</tr>
<tr>
<td>P2</td>
<td>produce a personal audit to indicate own strengths and areas for development reflecting requirements for a career in the aviation industry</td>
<td>M2 compile professional documents appropriate for application for employment in the aviation industry</td>
<td>D2 perform to a consistently high standard during an interview situation and show an in-depth understanding of the chosen career.</td>
</tr>
<tr>
<td>P3</td>
<td>complete documentation appropriate for application for employment in aviation including appropriate research</td>
<td>M3 demonstrate a high level of competence in an interview for employment in the aviation industry.</td>
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<tr>
<td>P4</td>
<td>participate in an interview for an aviation organisation.</td>
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</tbody>
</table>
Essential guidance for tutors

Delivery

The aviation industry has a wide range of rewarding and inspirational career opportunities; these create an image of the industry that is dynamic and glamorous. These occupations are much sought after, where only the best succeed. This unit aims to give learners the necessary knowledge and depth of understanding to confidently apply to enter the world of aviation.

Preparation is key to any successful attempt into this industry. The diverse and varied roles and employment entry requirements are almost as vast as the numbers of prospective employees.

Learners should be encouraged to appreciate fully the amount of preparation and depth of knowledge required prior to selection.

Group discussions of learners’ preconceptions about occupations within the aviation industry should be linked to discussion of the actual attributes necessary for each job role. A comparison could be made to separate fact from fiction. This will enhance the learners’ understanding of the job roles and assist in their investigation of their chosen career path.

Learners should be encouraged to produce annotated evidence relating to their personal attributes. Tutors should help the learners identify their skills and how they could be applied to the aviation industry. From this foundation, learners can build develop their skills.

Activities to develop learners’ skills should be as interactive as possible. Use of role play will assist the development of communication, customer service and teamwork skills. The industry values these attributes highly and strong emphasis should be placed on developing them. Personal presentation should not be underestimated, as this is an industry that thrives on good first impressions. Development of learners’ skills should match those undertaken by the main aviation organisations; use written and oral questioning where appropriate.

Learners should be encouraged to collect data relating to the career opportunities available in the aviation industry, and a ‘job centre’ or noticeboard area of the training room with this information collated would be supportive. Use of information technology, professional associations and aviation job fairs is vital to remain up to date with the aviation industry’s current vacancies and role requirements. Guest speakers from airline and airport organisations would enhance learning.

A report, or the use of a case study, could be produced to match the learners’ career aspirations and skills development to their ideal job role.

Personal audits should be produced to enable the learners to see their targets and plot opportunities for self-development.

Real application forms or adapted forms from aviation examples are essential to the learner’s knowledge; these are available from airlines and airports either in paper or electronic format. It would benefit the learners to see a variety of different formats.
It is important that learners understand the protocol and requirements necessary when preparing documents, as they give prospective employers their first insight into future candidates.

Tutors must teach current aviation interview techniques used by employers. Airlines and airports place high emphasis on interview performance to identify potential employees’ personalities and attributes; they use an extensive and varied choice of interview methods. These methods and techniques should be incorporated in the learners’ scenarios. Liaison with airline and airport organisations via their recruitment departments will assist in obtaining this information. It is vital that preparation for the interview is conducted in detail to ensure an effective and successful delivery of the role play.

A realistic environment is vital for interview practise and airline and airport personnel in supporting this process, if possible. Learners should be encouraged to participate fully; their personal presentation, documents and all other aspects of evidence must be prepared to a high standard to give a realistic impression. The use of video/audio recording, which learners can review, will help learners assess their own performance and identify areas of improvement and achievements.

**Assessment**

The assessment criteria shown in the grading grid can be grouped together to enable learners to expand on one criterion in order gain higher grades. The links are as follows: P1, P2, M1 and D1; P3 and M2; P4, M3 and D2. Where possible learners should be encouraged and given the opportunity to meet the relevant higher grading opportunities at the same time as they attempt the appropriate pass criteria.

**P1 — P2 — M1 — D1**

To achieve P1, learners must use information gained from appropriate sources to describe employment opportunities in the aviation industry. They must demonstrate that they know the roles available in all sectors of the industry (airlines, airports, ground handlers) and the respective entry requirements.

For P2, learners must initially identify their qualifications, experiences, skills and attributes. Evidence produced for P2 requires learners to focus on their own career development making links between this and their qualifications, experience skills and attributes. Achievement of this criterion should be based on the learner’s ability to produce an honest, and realistic audit of their suitability and aspirations for a career in aviation that clearly identifies their strengths and weaknesses. Group or one-to-one discussions can be used to support written evidence for this criterion, but must be properly evidenced with observation sheets.

M1 relates to P1 and P2 asking the learner to explain why their particular skills and attributes would be suitable for a specific job within the aviation industry.

D1 takes this further and requires the learner to assess their audit against an actual aviation job role; this should be a current example with factual information and data relevant to the learner’s career path. The learner should produce objective, well-written and comprehensive analysis of their strengths and weaknesses. Any recommendations for learners’ own improvements should be achievable and realistic.
P3 — M2

In order to achieve P3 the learner must produce accurately completed documentation to include a minimum of one of each of the four documents listed in the range (the personal statement may comprise part of the application form). Ideally, learners should use real documentation to apply for advertised jobs (even if the application forms are not submitted) or, if necessary, tutors could devise their own documentation. At pass level, documents should be accurately and adequately completed but may lack the ‘polish’ of documentation likely to secure an interview in a competitive employment area.

M2 allows for further development of this criterion, enabling the learner to perfect their documentation. Learners should be encouraged to send examples of their documents to aviation organisations, as the organisations appraisal and reply would support the learner’s evidence. All documentation must be word processed, logical, well structured and grammatically correct.

P4 — M3 — D2

For P4, learners should show good communication methods and an understanding of the job role which they are applying for (which could be real or devised by the tutor). The interview scenario format must follow aviation protocol and could be any one, or a combination of, the interview types in the Unit content; the interview should have a fixed structure and duration, and be completed entirely by the ‘candidate’. There should be an element of assessment of the candidate’s attributes or skills during the interview eg psychometric testing, group interaction etc.

To achieve M3, learners should demonstrate a high level of competence for most of the interview process. Examples of merit level competences may include high levels of verbal and non-verbal communication throughout, above average scores in an assessment of personal attributes, or effective questioning and answering techniques.

Further evidence is necessary to obtain the D2 criterion. Learners should perform at interview in a confident manner, displaying extensive knowledge of their chosen career, referring to an actual aviation organisation to substantiate evidence of in-depth knowledge and understanding. Learners must demonstrate the ability to answer complex questions and complete the interview selection process with a consistently high standard of evidence.

Any evidence from actual aviation interviews may be submitted and included in the learner’s assessment for this task. Copies of the interview selection process from the organisation should be appended to the assessment and supported by a witness statement. The level of actual aviation interview participation must be given consideration in accordance with the achievement reached by the learner.

Evidence produced orally needs to be supported by comprehensive observation sheets from the assessor. Observation sheets must demonstrate clearly which pass, merit and distinction criteria have been met. Ideally they should include the task content, which can be marked with a section for the assessor’s comments with the justification for their decision. Any other materials used by the learners should also be included. Oral presentations can be recorded on video or audio tape in order to assist assessment but these should only be used to support the observation sheets, not replace them.
Links to National Occupational Standards, other BTEC units, other BTEC qualifications and other relevant units and qualifications

This unit links to the National Occupational Standards in Aviation (Aviation Operations on the Ground) and (Cabin Crew) at Level 3. It also links to all units in the BTEC Nationals in Aviation Operations.

This unit offers progression from the Level 2 BTEC Firsts in Travel and Tourism and progression to the Level 5 BTEC Higher Nationals in Travel and Tourism Management.

Essential resources

Current examples of aviation recruitment procedures are necessary for the unit delivery. Application forms and data on actual organisations procedures would benefit and add realism to the processes.

Indicative reading for learners

Textbook

ISBN 1857039467

Journals and trade publications

*Personnel Today* — Reed Business Publications

Website

www.dwp.gov.uk  Department for Work and Pensions
Key skills

Achievement of key skills is not a requirement of this qualification but it is encouraged. Suggestions of opportunities for the generation of Level 3 key skill evidence are given here. Tutors should check that learners have produced all the evidence required by part B of the key skills specifications when assessing this evidence. Learners may need to develop additional evidence elsewhere to fully meet the requirements of the key skills specifications.

<table>
<thead>
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<th>Communication Level 3</th>
<th>When learners are:</th>
<th>They should be able to develop the following key skills evidence:</th>
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<tr>
<td></td>
<td>• participating in</td>
<td>C3.1b Make a formal presentation of at least eight minutes using</td>
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<td>an interview for</td>
<td>an image or other support material.</td>
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<td>an aviation</td>
<td>C3.3 Write two different types of documents each one giving</td>
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<td>organisation</td>
<td>different information about complex subjects. One document</td>
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<tr>
<td></td>
<td>• describing</td>
<td>must be at least 1000 words long.</td>
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<tr>
<th>Information and communication technology Level 3</th>
<th>When learners are:</th>
<th>They should be able to develop the following key skills evidence:</th>
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<tr>
<td></td>
<td>• researching</td>
<td>ICT3.1 Search for information using different sources, and</td>
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<td></td>
<td>employment</td>
<td>multiple search criteria in at least one case.</td>
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<td></td>
<td>opportunities in</td>
<td>ICT3.3 Present combined information such as text with image,</td>
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<td>the aviation</td>
<td>text with number, image with number.</td>
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<td>• completing</td>
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<td>in aviation</td>
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<table>
<thead>
<tr>
<th>Improving own learning and performance Level 3</th>
<th>When learners are:</th>
<th>They should be able to develop the following key skills evidence:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• producing a</td>
<td>LP3.1 Set targets using information from appropriate people and</td>
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<tr>
<td></td>
<td>personal audit,</td>
<td>plan how these will be met.</td>
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<td>indicating own</td>
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Unit 13: Airline and Airport Economics

NQF Level 3: BTEC National
Guided learning hours: 60

Unit abstract

Airlines and airports operate in a business environment and therefore they must generate revenue to survive. This unit develops the learner’s knowledge and understanding of the major economic dynamics that affect airports and airlines. Learners will be introduced to economic theory to provide building blocks for the more practical considerations that will be explored. The demand for airport and air services will be investigated by examining their major determinants. The effect of marketing on demand will be analysed, the ways in which the market is segmented will be investigated and demand characteristics explored. Learners will also analyse how demand can be measured and forecast.

When studying ‘supply’, learners will investigate the different types of airports and airline operators and how they can be categorised for further analysis. In terms of airports, ownership and economic regulations will be considered as will comparative performance indicators and benchmarking practices, along with the management of growth. How aircraft are evaluated and the different ways they can be acquired are also investigated together with analysis on how much they cost to operate. The different product planning processes will also be presented.

Learners will analyse the different ways costs can be classified and their practical uses. They will explore and identify the different factors that affect costs and what opportunities are available to control them. They will also investigate how growth can be funded and the impact of environmental and security issues.

Finally, pricing will be investigated in terms of the different strategies available, along with how airports and airlines might maximise revenue.

Learning outcomes

On completion of this unit a learner should:

1. Understand the reasons for and characteristics of demand for airport and airline services
2. Know the factors that affect the supply of airport and airline services
3. Understand the factors that affect airports and determine airline costs
4. Understand airport and airline pricing strategies and measures taken to improve revenue flow.
Unit content

1. Understand the reasons for and characteristics of demand for airport and airline services

   Demand economics: the nature of demand; demand curves; shifts in demand; elasticity
   
   Determinants of demand: concept of derived demand; factors affecting the demand for airports, eg location, catchment area characteristics, competition; factors affecting the demand for airline services, eg price, competition, income levels
   
   Demand characteristics: traffic patterns; seasonality; peaks and troughs; trends
   
   Forecasting demand: methods (qualitative, quantitative)
   
   Market segmentation: by route type (long haul, short haul, domestic); by passenger type (business, leisure, visiting friends and relatives, other)

2. Know the factors that affect the supply of airport and airline services

   Supply economics: nature of supply; supply curves and shifts; elasticity
   
   Suppliers: types of airport (major, regional, small); types of airlines, eg scheduled, low cost, passenger, cargo
   
   Airline supply planning: eg fares and conditions, service levels, route structure
   
   Airline supply economics: aircraft type considerations, eg payload, range, operating costs, unit cost per seat
   
   Airport: type of ownership; government airport policy, eg charges, runway capacity; economies of scale; capital planning, eg new terminals, runways, car parks, transport infrastructure; performance indicators, eg financial, passenger numbers

3. Understand the factors that affect airports and determine airline costs

   Cost economics: costing methods, eg marginal, average, allocation, fixed, variable
   
   Cost classifications: reasons for classifications; airports (operating and non-operating, airside and landside, aeronautical and commercial, staff, infrastructure, services); airline (direct and indirect operating costs, staff, fuel, travel agent commissions)
   
   Managing and factors affecting costs: external issues, eg fuel price, terrorism, demand, marketing and financial policies; cost control problems and opportunities; trends; total costs; role of budgeting
4 Understand airport and airline pricing strategies and measures taken to improve revenue flow

*Pricing economics:* price mechanism; price discrimination; price equilibrium; skimming; penetration

*Charges, tariffs and revenue:* airports (aeronautical and passenger related, commercial income, total income); airline, eg IATA, conditions and restrictions, fare structures; comparisons; current developments

*Managing revenue:* airline yield and revenue management techniques; airline interlining and code sharing revenue; maximising airport revenue; total revenue; role of budgeting
Grading grid

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

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<td>M1 compare the supply and demand characteristics of different types of airports and airlines</td>
<td>D1 analyse how the supply and cost factors of two different types of airport or airline are used to determine price</td>
</tr>
<tr>
<td>P2</td>
<td>describe the factors affecting the supply of airport and airline services</td>
<td>M2 explain how different types of airports and airlines control costs</td>
<td>D2 evaluate how the pricing strategies of two different types of airport or airline affect demand.</td>
</tr>
<tr>
<td>P3</td>
<td>describe how airport and airline costs are classified and explain the factors affecting costs</td>
<td>M3 explain how different types of airports and airlines use pricing strategies to improve revenue.</td>
<td></td>
</tr>
<tr>
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<td>describe the pricing strategies of airports and airlines.</td>
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Essential guidance for tutors

Delivery

A range of learning styles can be catered for in this unit, as much of the content may be covered actively, with supporting materials. Learners will need to understand both economic theory and practical application within the airport and airline industry.

Learners need to be aware of the nature of the different types of airports and airlines. Case studies can be written specifically to allow learners to examine issues relating to these types of airports and airlines. These studies can be undertaken individually or as part of a team and can be further developed into presentations and debates as necessary. A similar approach can be taken with research projects. Group research should be encouraged where investigation facilities are limited or not readily accessible.

Airport or airline business or marketing computer simulations can be employed as necessary to add a further dimension to the delivery of the subject. Debates on topical issues and role play can be encouraged.

Guest speakers, visits to airport and airline organisations and overseas trips would help learners understand the practical application of economics in an airport and airline environment.

Assessment

There are a number of assessment opportunities presented by the subject matter in this unit. For example, a research project could investigate a range of UK airports and compare them, eg their ownership, size, activities, facilities. These could then be further evaluated by examining their costs and charging structures. This investigation could focus on all airport outcomes and test the learners’ ability to synthesise and evaluate information. In addition, a research project on the development of passenger services between the UK and the USA could look at airline learning outcomes 1 and 2 and test the learner’s ability to synthesise and evaluate information.

Alternatively learners could be provided with an opportunity to advise a fictional airport or airline management board on the type of service it should offer and planning considerations it should take, based on hypothetical demand forecasts. This would encourage participation and enable learners to demonstrate their communication and presentation skills. Role playing can also be encouraged in, for example, marketing campaigns.

Financial case studies can be employed where costs and revenues are examined in more detail.
The assessment criteria shown in the grading grid can be grouped together to enable learners to expand on one criterion in order gain higher grades. The links are as follows: P1, P2, M1 and D1; P3 and M2; P4, M3 and D2. Where possible learners should be encouraged and given the opportunity to meet the relevant higher grading opportunities at the same time as they attempt the appropriate pass criteria.

**P1 — P2 — M1 — D1**

To achieve P1, learners must describe the reasons for and the theory of demand and give a clear description of the characteristics of demand for airport and airline services. All characteristics covered in the [Unit content](#) must be included. A clear description should show that learners understand the differences between each characteristic. All characteristics should be related to airports and airline services and not products and services in general. Learners must cover different types of airport, eg major, regional, and different types of airline, eg scheduled, low-cost, scheduled, charter and cargo.

For P2, learners must describe the theory of supply and give a clear description of the different types of suppliers. The [Unit content](#) specifies the range to be described. Each type must be clearly described and examples should be included. The factors affecting supply of each type must also be described. These should not be generic descriptions but clearly linked to the different types of service providers.

To achieve M1, learners must compare the supply and demand characteristics of different types of airports and airlines. Learners should look at a minimum of three different types across airlines and airports. Similarities and differences in supply and demand models for the three types of organisation must also be included. At this level it would not be sufficient to produce a table simply classifying each type of airport or airline against specified terms. The comparison should include a narrative highlighting key points and giving reasons for similarities and differences.

To achieve D1, learners need to focus their evidence on two different airports or two different airlines. They need to analyse how all of the factors of supply and demand are used to determine price. Responses should be comprehensive. An example of an appropriate level of response could be, ‘The airline lowers its fares to Murcia outside traditional school holiday periods as demand for these flights is lower. However, generally, over the past five years both frequency and costs of these flights have increased overall, despite increased competition from a low-cost airline. This may be owing to the growing numbers of British people owning property in the area and suggests that demand is exceeding supply.’

**P3 — M2**

To achieve P3, the classification of airport and airline costs must be fully described. This should include all those covered in the [Unit content](#). The factors affecting these costs must be explained and should include reasons and not just a description.

The evidence for M2 must explain how different types of airports and airlines control costs. These have been explained for P3, but need to be related to the different types of airport and airline.

**P4 — M3 — D2**

Pricing strategies must be described to achieve P4.
For M3, learners must explain fully how different types of airports and airlines use pricing strategies to improve and manage revenue. Learners should explain the types of airports and airlines that adopt these strategies and why.

For D2, learners must evaluate the effectiveness of the pricing strategies adopted to affect demand of either two airlines or two airports. An example of a suitable comparison could be a low-cost and a scheduled airline that both compete over similar routes, for example the European winter sports market. A scheduled operator may use price skimming in order to keep its fares higher, but include additional services such as ski carriage, whereas a low-cost carrier may adopt a penetration pricing policy, but then charge extra for check-in baggage over a certain weight.

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

This unit links to the National Occupational Standards in Aviation (Aviation Operations on the Ground) at Level 3. It also links to the following units in the BTEC Nationals in Aviation Operations:

- Unit 1: The Aviation Industry
- Unit 6: Marketing the Aviation Industry
- Unit 12: Preparation for Working in the Aviation Industry.

This unit offers progression from the Level 2 BTEC Firsts in Travel and Tourism and progression to the Level 5 BTEC Higher Nationals in Travel and Tourism Management.

Essential resources

Learners need access to information on current issues within the air transport industry. Information can be found on the internet and in broadsheet newspapers, textbooks, industry magazines and trade publications. The most valuable tool is the internet and learners need regular access in order to carry out research and collect information.

Indicative reading for learners

Textbooks


Key skills

Achievement of key skills is not a requirement of this qualification but it is encouraged. Suggestions of opportunities for the generation of Level 3 key skill evidence are given here. Tutors should check that learners have produced all the evidence required by part B of the key skills specifications when assessing this evidence. Learners may need to develop additional evidence elsewhere to fully meet the requirements of the key skills specifications.

<table>
<thead>
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<tr>
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</tr>
<tr>
<td>• describing the pricing strategies of airports and airlines.</td>
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Unit 14: Human Resources in the Aviation Industry

NQF Level 3: BTEC National
Guided learning hours: 60

Unit abstract

Airlines and airports are service-driven organisations, therefore continuous recruitment of good staff is essential to their survival. This unit introduces learners to the pivotal role of human resources within the aviation industry. They will gain an understanding of the management processes that may affect them as they seek employment within the industry. The unit could also encourage them to seek employment in human resources or to study the subject at a higher level.

Learners will explore the wide-ranging role and varied responsibilities of human resources and appreciate that the effective management of staff is one of the most important determinants of an organisation’s success. They will explore the diverse skills and qualities needed to work within these demanding, pressurised and challenging posts.

Different organisations are characterised by various organisational structures. The factors that determine such structures will be covered, coupled with the effects that these different structure styles have upon the workplace. In particular, learners will consider how differing structures will affect human resources.

Procedures involved in the selection and recruitment of personnel are an integral part of this unit. Learners will be directly involved in producing documentation and gaining knowledge of the legal and ethical obligations that govern the recruitment and selection process. They will also be required to role play an interview. Learners will explore ways of gaining successful employment from a management perspective.

Learners must also consider legislation affecting the workplace, as well as standards of performance and behaviour. Procedures and sources of information and advice for ensuring their successful implementation are explored. Learners will evaluate the impact of current employment legislation and assess their individual performance in the practical elements of the unit.

Learning outcomes

On completion of this unit a learner should:

1. Understand the roles and responsibilities of human resources departments within aviation organisations
2. Know the recruitment and selection procedures used by aviation organisations
3. Understand workplace standards and performance, procedures and legislation
4. Understand organisational structures and their effects on aviation organisations.
Unit content

1 Understand the roles and responsibilities of human resources departments within aviation organisations

Roles: strategic; contributing to organisational efficiency; staff development; meeting specific objectives, eg diversity, investing in local community

Responsibilities: recruitment; induction; staff development, eg training; maintaining workplace standards, eg health and safety, equal opportunities; managing employment procedures, eg grievance, appraisal, redundancy, retirement, termination

Skills and qualities required for human resources staff: people skills; ability to handle a crisis; discretion; motivational skills; communication; teamwork; project management skills; ability to manage change; attention to detail

2 Know the recruitment and selection procedures used by aviation organisations

Recruitment and selection: job descriptions, eg job title, responsibilities; person specification, eg qualifications, experience, personal qualities; job/skills advertising; interview assessment documents; shortlisting; dealing with references; interviews; assessing applicants; confirming employment; notifying rejection; notifying appropriate departments, eg finance, security; Criminal Record Bureau (CRB) checks; job description, eg job title, job responsibilities; person specification, eg qualifications, experience, personal qualities

Obligations: compliance with relevant legislation, eg ensuring non-discriminatory practice; contracts of employment (short term, temporary, permanent, multi-function); ethical (objectivity, transparent procedures, honesty)

Job advertisement: purpose, eg to attract suitable candidates, to project a professional company image; content, eg organisational details, job title, location, candidate profile, remuneration and rewards, how to apply, closing date; location of advertisements, eg internal, Jobcentres, internet, specialist press

Interviews: type, eg individual, group, panel; stages, eg initial telephone survey, second interview

Interview structure: preparation, eg clarify objectives, review paperwork; techniques, eg putting candidate at ease, objective questioning, probing questions; conclude, eg information on next stages; candidate assessment sheet
3 Understand workplace standards and performance, procedures and legislation

Standards and performance: dress and personal appearance; hygiene; attitude to customers (internal, external); behaviour; punctuality and attendance; sickness procedures; time-keeping; responsibility to the work environment

Procedures to maintain standards and performance: workplace rules, eg employee charters, standards, mission statements; disciplinary and grievance procedures; customer charters; occupational health; reward schemes

Current employment legislation: employment relations; pay; antidiscrimination (sex, disability, race, age, sexual orientation, gender); data protection; employment contract law; working hours

Sources of information and advice: eg Department for Employment, Health and Safety Executive, Equal Opportunities Commission, Commission for Racial Equality, trade associations and advisory bodies, trade unions, employers’ codes of practice, other local sources

4 Understand organisational structures and their effects on aviation organisations

Organisational structures: types of structures, eg hierarchical, matrix, centralised, decentralised; lines of authority with key job roles, eg chair of board, executive directors, non-executive directors

Factors determining organisational structure: number of employees; location; nature of product or service; ownership, eg public, private, voluntary; competition; change, eg markets, demographics; government policy

Effects of organisational structure: on staff, eg job opportunities, career plans, work relations; on organisation, eg decision making, productivity, profitability
Grading grid

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

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<td><strong>P1</strong></td>
<td>describe the role and responsibilities of human resources within an aviation organisation</td>
<td><strong>M1</strong> explain how recruitment and selection and interviewing processes can affect the operation of a specified aviation organisation</td>
<td><strong>D1</strong> evaluate own performance in conducting a formal interview and producing relevant documentation, making recommendations for improvement.</td>
</tr>
<tr>
<td><strong>P2</strong></td>
<td>describe the recruitment and selection process followed by aviation organisations in order to meet obligations</td>
<td><strong>M2</strong> explain how workplace standards and legislation support good practice in aviation organisations</td>
<td></td>
</tr>
<tr>
<td><strong>P3</strong></td>
<td>produce relevant documentation for a specific job role within an aviation organisation and conduct a formal interview</td>
<td><strong>M3</strong> make recommendations for improvements to organisational structure for a specified aviation organisation in order to make it more effective.</td>
<td></td>
</tr>
<tr>
<td><strong>P4</strong></td>
<td>describe the workplace standards and performance and procedures used by the aviation industry to maintain them</td>
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<tr>
<td>P5 use appropriate sources of information and advice to describe current workplace legislation affecting the aviation industry</td>
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<tr>
<td>P6 describe the structure of a specified aviation organisation, including factors affecting it, the structure’s effects on staff and the organisation.</td>
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</table>
Essential guidance for tutors

Delivery

This unit looks at the recruitment and governance of staff and examines the skills and qualities that are required to work in human resources. Learners will investigate the mandatory legal obligations that organisations have to adhere to, as well as their staff supervision and performance monitoring techniques. This unit gives learners an overview of the diversity and importance of human resource management with a level of knowledge and understanding as viewed from a management perspective.

Learning should be in the context of the airline and airport industry and its unique characteristics explained. The significance of European Union (EU) expansion and the consequences of this large and diverse workforce’s ability to move freely throughout the EU should be discussed with learners. This will aid understanding of changes in the makeup of the workforce and how organisations respond and adapt.

Tutors can use a wide range of teaching methods and learners can investigate real organisations. Lectures on challenging issues are recommended, followed by group debate. It will be helpful to learners if they give oral presentations to the whole group to display their findings. This will add interest and improve learners’ confidence whilst fine-tuning their communication and information technology skills. There are also opportunities for practical activities within the unit and for learners to use their creative talents.

The wide-ranging role and responsibilities of human resources and its importance to the successful running of the organisation need to be explored. Learners must appreciate that the human resources department form the backbone of an organisation and that human resources staff work with both employers and employees. The ideology that an organisation’s most precious asset is its people should be hailed as best practice. Learners could investigate different organisations and their differing approaches to human resources issues and have group discussions on their findings.

To understand the recruitment and selection process, learners must be taught a detailed step-by-step guide as many will have no experience of it. A visit to an airport would help learners gather information packs, which are distributed by the tour department. Guest speakers or visits to companies would provide valuable insights into their recruitment strategies.

The various types of contract (short-term, permanent, temporary, multifunction) should be examined. To aid the understanding of the multifunction contract it would be beneficial to consider First Choice and Jet2.com as a case study. These integrated organisations use an open day concept of recruitment and try to encourage employees to see themselves as working for a global company. They cross them over from one section of the industry to another, eg cabin crew/overseas reps work in other sections of the company in the winter and then return to their original posts in the summer. This gets round the need for temporary contracts and the costly recruitment process to rehire. Current issues will be in both the national and travel trade press.
When being taught questioning techniques learners should understand the differences between the question types, e.g. closed, open, probing. Activity sheets of various questions can be used where learners identify the correct question types.

Understanding could be confirmed with group activities where learners have to create different types of questions for interview purposes. The suitability of the questions can then be debated amongst the whole group. Body language should be simulated and discussed to make learners aware of its significance.

The fun element should come in the role play and learners will be required to recognise the need for appropriate dress and professional behaviour. The various components of the interview, e.g. greeting, eye contact, seating layout, should be demonstrated, and learners should have the chance to practise. This will aid understanding and give confidence prior to the assessment. Videos on interview techniques would support the learning process.

It is recommended that learners familiarise themselves with genuine companies’ recruitment campaigns prior to producing their own documentation. This will contribute to their awareness of marketing a company image, coupled with the complexities of matching a job role to an application form and the legal obligations required in the process. Researching real organisations via the internet and specialist trade periodicals should help learners understand application documentation. They can also obtain job advertisements and send for application packages. When creating application documentation learners should use information technology for a high standard of presentation. Rodgers’ seven-point plan should form the foundation of the recruitment documentation content.

The standards of behaviour could be brought alive if learners investigate a job that they themselves would like to apply for. They could use the same job for which they produced documentation in P4. Learners could create a complete job portfolio or visual display that presents both the work standards information and application documentation.

Key employment legislation relating to pay, employment relations and sex discrimination should be explained. Learners need to understand the implications of failure to comply with these requirements. Learners could discuss the effects of legislation on organisations and how they have dealt with it. Case studies using the internet could reinforce the learning. The EU directive on ageism should be debated as it has had a major impact on recruitment and selection procedures. The Health and Safety at Work Act 1974, Control of Substances Hazardous to Health, and Fire Precautions Act 1971 all have significant repercussions for airline and airport organisations. Learners can download information via the internet, and then, working in groups, present their findings.

Information about performance standards can be gleaned from company websites or from a visit to an organisation or guest speaker.
For organisational structures learners should be able to explain the contrasting styles. As there are several, it may be useful to divide learners into small groups and each could explore one type, e.g. flat, hierarchical, simple, centralised, decentralised and matrix. They could then present their findings to the whole group. The required chosen organisation could also be described in this manner with learners acting as representatives of the organisations. This simulated activity would add interest and realism. For oral presentations of research findings, learners should be encouraged to include high quality visual aids or use PowerPoint. Learners could present in a variety of environments including the lecture theatre thereby enhancing their confidence and communication skills.

Assessment

The assessment criteria shown in the grading grid can be grouped together to enable learners to expand on one criterion in order gain higher grades. The links are as follows: P1; P2 and M1; P3 and D1; P4, P5 and M2; P6 and M3. Where possible learners should be encouraged and given the opportunity to meet the relevant higher grading opportunities at the same time as they attempt the appropriate pass criteria.

P1

The evidence provided for P1 must describe the importance and wide-ranging responsibilities of human resources within an aviation organisation. Learners should clearly illustrate the holistic concept of human resources whereby the employer has a duty of care towards its employees from placing an initial job advertisement until an employee leaves the organisation. The description should demonstrate knowledge and understanding of all the essential content. The importance of HR to the success of the organisation and the diversity of the role should be clearly portrayed.

P2 — M1

For P2, each stage of the recruitment and selection process should be clearly described in general terms, as identified in the Unit content. The descriptions must be clear and each stage must be described in the appropriate order. Evidence for this criterion should be in general terms, with appropriate examples from specific aviation organisations used to support descriptions. The description should include all of the essential content in recruitment, selection and obligations.

For M1, learners need to research into a specified aviation organisation. This could be a real one or a case study if necessary. The explanation should include specific examples of how the organisation may be affected by its recruitment and selection processes. An example of this could be how the media chosen to advertise positions leads to certain types of people applying for jobs. This could impact on their obligations to recruit a diverse workforce as they may not attract individuals from particular ethnic groups.
P3 — D1

For P3, learners must produce documentation for a particular job role. This should be a position that they could realistically apply for on completion of their studies rather than a managerial post. This will ensure that the information provided in the documentation is appropriate. The documentation should include a job advertisement, person specification, job description and interview assessment sheet. Learners should demonstrate an understanding of appropriate aviation industry practices in producing the documentation and carrying out the interview. The legal obligations required in the process should be evident. The documentation should be produced using ICT.

The formal interview can be simulated in a role play. It should be done in a professional and structured manner, with the learner assessed in their role as an interviewer. Learners should dress accordingly and demonstrate their understanding of each component of the interview process in its entirety. They should prepare the room layout and greet candidates accordingly. The proficient use of questioning techniques must be evident. All component stages of the interview should be included. The candidate to be interviewed could be drawn from another cohort rather than the interviewer’s peer group in order to maintain the integrity of the proceedings.

To achieve D1, learners should evaluate their strengths and areas for improvement in producing documentation and conducting an interview. This should be based on their own observations, feedback from candidates and comments from the assessor. They should make appropriate and realistic recommendations for improvement.

P4 — P5 — M2

For P4, learners should describe the standards and performance and procedures used to enforce these in the aviation industry. Many standards adopted by the industry such as punctuality and sickness procedures are common to all employment sectors, but learners should make their descriptions specific to aviation, using appropriate aviation examples. The description of procedures used should relate to current industry practice that learners have studied in the aviation industry.

P5 requires that learners demonstrate knowledge of current legislation which affects the aviation industry. Learners should summarise the key points of all legislation listed in the Unit content and describe how this affects operations in the aviation industry. An example of an appropriate response at this level could be as the age discrimination legislation states that organisations must not discriminate against candidates because of their age, airlines may no longer advertise for ‘cabin crew aged 20-30’ as they have no justification for these ages. Learners should ensure that they use the most up to date and appropriate sources for legislation and therefore should cross-reference within their work and provide a list of sources that clearly demonstrates they have done this.

For M2, learners must explain how organisations maintain good practice by adopting standards and complying with legislation. In effect, learners should explain why these standards and laws exist in relation to good practice. An example of a suitable response at this level would be for a learner to explain how a strict uniform policy for ground handlers helps to make passengers feel safe and secure at check-in because they are more likely to have faith in an organisation that portrays a professional image.
P6 — M3

For P6, learners should fully describe the organisational structure of a real aviation organisation. They may use an organisational chart to support their description. For the description to be meaningful, learners should not choose an organisation with fewer than 30 staff. Learners must use their own words in the description and not those of their chosen organisation. Learners should then describe relevant factors which may determine the structure and the effects of the structure on the staff and organisation. As example of an appropriate response at this level could be, ‘This airline has a large workforce so it employs its own full-time staff trainers, who work in the ‘Learning and Development’ department’.

For M3, learners should make reasonable and justified recommendations as to how the organisational structure described in P6 could be improved in order to make it more effective. This could include suggestions such as decentralising the structure so the organisation can operate autonomously in other geographical areas so that it can meet local demands. This could be true of a large airline with an overseas base, which may be more effective if it organised staff training locally, rather than through the head office.

Evidence produced orally needs to be supported by comprehensive observation sheets from the assessor. Observation sheets must demonstrate which pass, merit and distinction criteria learners have achieved. Ideally, the sheets will include Unit content that can be ticked off and a box for the assessor’s comments justifying their decision. Any other materials used by the learner, eg preparatory notes or visual aids, should also be included. Oral presentations can be recorded on video or audio tape in order to aid assessment, but recordings should only be used to support observation sheets, not replace them.

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

This unit links to the National Occupational Standards in Aviation (Aviation Operations on the Ground) and in Personnel at Level 3. It also links to the following units in the BTEC Nationals in Aviation Operations:

- Unit 1: The Aviation Industry
- Unit 2: Health, Safety and Security in the Aviation Industry
- Unit 12: Preparation for Working in the Aviation Industry.

This unit offers progression from the Level 2 BTEC Firsts in Travel and Tourism and progression to the Level 5 BTEC Higher Nationals in Travel and Tourism Management.

Essential resources

A number of textbooks focus on human resources in general, others are written specifically for the travel industry and these and broadsheet newspapers should be easily accessible to the learners.
Indicative reading for learners

Textbook


Website

www.dwp.gov.uk The Department for Work and Pensions
Key skills

Achievement of key skills is not a requirement of this qualification but it is encouraged. Suggestions of opportunities for the generation of Level 3 key skill evidence are given here. Tutors should check that learners have produced all the evidence required by part B of the key skills specifications when assessing this evidence. Learners may need to develop additional evidence elsewhere to fully meet the requirements of the key skills specifications.

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<tr>
<td>• describing the recruitment and selection process followed by aviation organisations</td>
<td>C3.1b Make a formal presentation of at least eight minutes using an image or other support material.</td>
</tr>
<tr>
<td>• describing the role and responsibilities of human resources within an aviation organisation</td>
<td>C3.3 Write two different types of documents each one giving different information about complex subjects. One document must be at least 1000 words long.</td>
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<tr>
<th>Information and communication technology Level 3</th>
<th>They should be able to develop the following key skills evidence:</th>
</tr>
</thead>
<tbody>
<tr>
<td>When learners are:</td>
<td></td>
</tr>
<tr>
<td>• researching current workplace legislation affecting the aviation industry</td>
<td>ICT3.1 Search for information using different sources, and multiple search criteria in at least one case.</td>
</tr>
<tr>
<td>• designing and producing relevant documentation for a specific job role within an aviation organisation</td>
<td>ICT3.3 Present combined information such as text with image, text with number, image with number.</td>
</tr>
</tbody>
</table>
Unit 15: Airport Emergency Operations

NQF Level 3: BTEC National
Guided learning hours: 60

Unit abstract

Understanding the non-standard events at an airport in terms of, for example, accidents, snow and ice, security incidents and diversions is at the very centre of the work involved in the running of airports and airlines. It is important, therefore, that learners appreciate the factors leading up to, during and after an emergency situation. Learners must also understand the subsequent effects of not meeting needs fully.

Learners need a good understanding of procedures to deal with emergency situations, and also the exercises and training undertaken to respond to these situations.

Learners must understand the activities that occur in the immediate aftermath of a crash or an aircraft-related incident. They will learn how to deal with survivors, casualties, relatives and friends in a professional, caring way.

This unit aims to develop knowledge and understanding in key areas of safety management. At the end of the unit the learner will be able to identify the major responsibilities and activities involved in returning an airport to normal operational status after an accident or an incident.

Learning outcomes

On completion of this unit a learner should:

1. Know the procedures required for effective coordination of immediate aircraft-related incidents
2. Understand the procedures required when dealing with the personal aspects of a serious incident
3. Know the methods of returning airport to normal operation
4. Understand the effects of non-standard operations at an airport.
Unit content

1  Know the procedures required for effective coordination of immediate aircraft-related incidents

*Incidents*: mid-air collision; runway collision; runway incursion; crash post-departure; crash pre-arrival

*Fire and rescue activity*: airfield categorisation; effects of different aircraft types, eg on firefighting procedures; effects of terrain; water supply; Rescue and Firefighting Facility (RFF) category

*Control activities*: aerodrome emergency orders; levels of response readiness; chain of command; communications; coordination; zoning; access; agencies involved; notification; colour coding of threat level

2  Understand the procedures required when dealing with the personal aspects of a serious incident

*Survivors*: triage; transportation; hospital coordination and records; debriefing; reconciliation with friends and family

*Deceased*: provision of morgue facilities; provision of undertaking facilities; coroner input; identification; notification (next of kin, authorities)

*Incident control*: passenger lists; records; telephone enquiries; press releases; media liaison

3  Know the methods of returning airport to normal operation

*Removal and recovery of disabled aircraft*: methods available; effects of weight and centre of gravity changes; unloading (passengers, baggage, cargo); de-fuelling; fuel contamination; problems caused by surrounding terrain; recovery of flight data recorder (FDR); recovery of cockpit voice recorder (CVR)

*Agencies involved in recovery*: eg aircraft owners, airport handling agencies, Civil Aviation Authorities, aircraft operators, insurance assessors, accident investigation agencies, aircraft manufacturers, HM Customs and Revenue, airport operators

*Maintenance of operations*: eg re-declaring of distances, assessment and repair of airfield serviceability, removal of debris, lighting, reduced emergency cover, Notice to Airmen (NOTAMS)

*Effects of outbound diversions*: eg terminal congestion, ground transportation, information (to passengers, carriers, other airports), accommodation
4 Understand the effects of non-standard operations at an airport

*Snow and ice operations*: effects on aircraft performance; snow clearance (equipment, methods); assignment of priorities; de-icing (surfaces, aircraft); Notice to Airmen (NOTAMS), eg advising about snow conditions (SNOWTAMS), forecasts

*Operations during security incidents*: bomb threats (categorisation, procedures); hijacks (people, buildings, aircraft); missing passengers; unidentified baggage

*Operations during inbound diversions*: resource limitations, eg handling equipment, height, capability; aircraft parking; availability of surface transport; passenger handling and transfer
**Grading grid**

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

<table>
<thead>
<tr>
<th>Grading criteria</th>
<th>To achieve a pass grade the evidence must show that the learner is able to:</th>
<th>To achieve a merit grade the evidence must show that, in addition to the pass criteria, the learner is able to:</th>
<th>To achieve a distinction grade the evidence must show that, in addition to the pass and merit criteria, the learner is able to:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>P1</strong></td>
<td>describe the procedures required for effective coordination of an aircraft-related emergency incident</td>
<td>M1</td>
<td>explain the importance of a coordinated approach when dealing with incidents in aviation</td>
</tr>
<tr>
<td><strong>P2</strong></td>
<td>describe procedures used when dealing with survivors and the deceased after an aircraft incident</td>
<td>M2</td>
<td>explain the problems encountered when attempting to revert to normal airport operations following an aircraft-related incident, giving examples of situations researched</td>
</tr>
<tr>
<td><strong>P3</strong></td>
<td>describe the role of incident control in dealing with a serious incident</td>
<td>M3</td>
<td>explain methods adopted by airports to deal with non-standard operational procedures at an airport.</td>
</tr>
<tr>
<td><strong>P4</strong></td>
<td>describe the methods of returning an airport to normal operation</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>P5</strong></td>
<td>describe the effects of non-standard operations at an airport.</td>
<td></td>
<td>D1</td>
</tr>
</tbody>
</table>
Essential guidance for tutors

Delivery

This unit highlights the importance of having an airport emergency plan in place in order to meet legal requirements of the emergency orders.

It is important to remember that airlines and their passengers need to have their expectations met even in an emergency. They need to be confident that the airport will return to normal operation as soon as possible.

A visit to at least one airport is essential, with emphasis being placed on the content of the emergency plan and security procedures. Parts of this information may be sensitive and not in the public domain. Useful comparisons and contrasts can be drawn if more than one airport is visited. Work experience in an airport environment would improve learners’ understanding and give them the opportunity to conduct more detailed individual research. It would be useful for learners to receive a presentation from the airport police or another emergency service where they can ask questions. As there is multi-agency involvement, the opportunity for guest speakers exists.

It is important that learners are able to research and gain knowledge of the various methods of dealing with incidents. They must have opportunities to research case studies relating to non-standard operational procedures and to apply their knowledge to case studies and tasks. Examples to be discussed and researched could be linked to recent air incidents which are usually comprehensively covered in the media and likely to be fairly accessible for research.

It would be useful for the tutor to create scenarios where learners can work in groups to share ideas about how to deal with various situations. Learners could share their ideas through group work and presentations and then apply their learning to their individual assignments. Opportunities exist for a ‘table top’ exercise followed by a debrief to discuss what worked and the problems encountered. This exercise would mirror real situations and briefings held by the emergency services and airport/airline personnel.

Teamwork must also be considered within this unit because to effectively meet operational needs, teamwork is vital. The aviation industry operates professionally when all employees work together to achieve the common goal, which is to operate safely, efficiently and effectively.

Assessment

The assessment criteria shown in the grading grid can be grouped together to enable learners to expand on one criterion in order gain higher grades. The links are as follows: P1, P2, P3 and M1; P4 and M2; P5 and M3; D1. Where possible learners should be encouraged and given the opportunity to meet the relevant higher grading opportunities at the same time as they attempt the appropriate pass criteria.
P1 — P2 — P3 — M1

To achieve P1, learners must describe the procedures required for effective coordination of an aircraft-related emergency incident. Learners should select one type of aircraft-related incident, listed in the Unit content, to describe all the procedures relevant to that incident.

They must describe clearly each stage the process involved in the incident including details of relevant documentation. It should be evident from the description that learners have a thorough understanding of the process to be followed.

P2 asks for learners to describe procedures used when dealing with survivors and the deceased after an aircraft incident. Learners should relate this to communication and the importance of delivering the correct information. This is to ensure that agencies and relatives receive correct and up-to-date information.

Learners must describe the process involved in reconciling survivors with friends and relatives. As it is a process, each stage, including details of relevant documentation, must be described clearly, if necessary learners could use examples of real incidents they have researched to show how procedures are put in place in real life. It should be evident from the clarity of the description that learners have a thorough knowledge of the process.

To obtain P3, learners must describe the role of the incident control centre when dealing with survivors. This should include all items listed in the Unit content such as how passenger lists are obtained, what types of records are likely to be kept, how telephone enquiries would be dealt with, how press releases are devised and the procedure for dealing with the media.

For M1, learners need to be able to explain the importance of a coordinated approach to managing incidents in aviation. This should include why the various procedures described in P1. P2 and P3 are set up and coordinated centrally. An example of an appropriate level of response would be, ‘If there are fatalities, it is important that there are coordinated plans for undertakers and morgue facilities, even if individual relatives want to make their own arrangements. This is because there will probably be an inquiry following the incident and an examination by the coroner may form part of the evidence.’.

P4 — M2

To achieve P4, learners must describe the methods of returning an airport to normal operation. Learners must summarise procedures required to recover to normal airport operation following an aircraft-related incident. Learners may submit their descriptions in general terms, using examples from real incidents where appropriate. Alternatively this criterion could be achieved through a scenario, based on a fictitious incident, which is set by the tutor.

For M2, learners should explain the problems which are commonly encountered immediately after an incident, when normal airport operations are resumed. This could include a reduced runway capacity or the impact of heightened media scrutiny. Learners should include a minimum of two specific problems and use examples of situations they have researched to support their explanations.
UNIT 15: AIRPORT EMERGENCY OPERATIONS

P5 — M3

To obtain P5, learners must describe the effects of non-standard operations at an airport. This description should be in general terms and not necessarily related to any specific airport.

M3 requires learners to go on to explain the actual methods adopted by airports to deal with non-standard operational procedures. At least two non-standard operations should be covered in the explanation, e.g. hijack and inbound diversions.

D1

D1 requires learners to evaluate the methods adopted by airports to deal with serious incidents and non-standard operations. This criterion draws on all pass and merit criteria in the Grading grid. Learners should research real incidents that have taken place (they may already have referenced these in the pass and merit criteria). Learners should make judgments of how incidents were handled and how effective procedures were. 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.

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

This unit links to the National Occupational Standards in Aviation (Aviation Operations on the Ground) at Level 3. It also links to the following units in the BTEC Nationals in Aviation Operations:

- Unit 1: The Aviation Industry
- Unit 5: Aircraft Operations
- Unit 9: Air Cargo Operations
- Unit 10: Airport Ramp Handling
- Unit 11: Aircraft and Airfield Performance
- Unit 12: Preparation for Working in the Aviation Industry.

This unit offers progression from the Level 2 BTEC Firsts in Travel and Tourism and progression to the Level 5 BTEC Higher Nationals in Travel and Tourism Management.

Essential resources

Learners must have access to library and research facilities which include current trade publications detailing and reviewing procedures for dealing with emergencies and other incidents.
Indicative reading for learners

CAP168 Licensing of Aerodromes — Chapter 9 Emergency Planning
Appendix 9A Emergency Planning Committee Formation
Appendix 9B Notes for Guidance in Making Emergency

Journals and trade publications

*Flight International* — Reed Business Publications

Website

www.caa.co.uk  Civil Aviation Authority
Key skills

Achievement of key skills is not a requirement of this qualification but it is encouraged. Suggestions of opportunities for the generation of Level 3 key skill evidence are given here. Tutors should check that learners have produced all the evidence required by part B of the key skills specifications when assessing this evidence. Learners may need to develop additional evidence elsewhere to fully meet the requirements of the key skills specifications.

### Communication Level 3

<table>
<thead>
<tr>
<th>When learners are:</th>
<th>They should be able to develop the following key skills evidence:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• explaining procedures used when dealing with survivors and the deceased</td>
<td>C3.1b Make a formal presentation of at least eight minutes using an image or other support material.</td>
</tr>
<tr>
<td>• explaining the role of incident control in dealing with a serious incident.</td>
<td>C3.3 Write two different types of documents each one giving different information about complex subjects. One document must be at least 1000 words long.</td>
</tr>
</tbody>
</table>

### Information and communication technology Level 3

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<tr>
<th>When learners are:</th>
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</tr>
</thead>
<tbody>
<tr>
<td>• describing the procedures required for effective coordination of an incident.</td>
<td>ICT3.3 Present combined information such as text with image, text with number, image with number.</td>
</tr>
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</table>

### Problem solving Level 3

<table>
<thead>
<tr>
<th>When learners are:</th>
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</tr>
</thead>
<tbody>
<tr>
<td>• describing the methods of returning an airport to normal operation.</td>
<td>PS3.1 Explore a problem and identify different ways of tackling it.</td>
</tr>
</tbody>
</table>
Unit 16: Environmental Impacts of Aviation

NQF Level 3: BTEC National
Guided learning hours: 60

Unit abstract

The unit is designed to develop learners’ knowledge and understanding of issues relating to airport planning and development, including the impact of the airport on the environment and on the local community. Learners will develop knowledge and understanding of the measurement, control and reduction of airport and aircraft pollution.

Learners will learn through investigation about airport planning and development. The research will cover different types of airports, case histories, legislation and public opinion, the need for new airports and planned future development.

Learners will examine the issues relating to noise pollution, fuel and chemical pollution, air pollution, excessive lighting and heating and their effects on the airport environment.

Learners will investigate how airport and aircraft pollution is measured and controlled in relation to the various types of pollution. Learners will study measures taken to reduce pollution and to save energy. They will learn about the quality standards that are in place and the planning measures that are taken into consideration before new developments are approved.

Learners will investigate the positive and negative impacts of airport developments on the local community and the role of airport public relations in establishing good working relationships with the local community, local organisations and local authorities.

Learning outcomes

On completion of this unit a learner should:

1. Know airport planning and development processes
2. Understand the negative impacts of airports regarding pollution of the environment
3. Know the methods of control and reduction of airport and aircraft pollution
4. Understand the positive impacts of aviation and how relationships with the public are maintained.
Unit content

1 Know airport planning and development processes

Planning: laws (Government, local authority); regulations and bylaws (Government, local authority)

Development: geographical location; accessibility and transport links; green field sites; proximity to urban conurbation; need/rationale for development, eg airport congestion resulting in need for an increase in number of runways; types of development, eg increase in length of runways, new terminals, extensions to terminal buildings, new/improved access (road, motorway, rail)

Future developments: eg relaxation of night flying controls, building of runways into the sea, architecture of terminal buildings

2 Understand the negative impacts of airports regarding the pollution of the environment

Noise pollution: causes, eg aircraft flight path, landing and taking off; impacts on airport workers, eg loss of hearing; impacts on airport neighbours, eg stress, devalued property

Water pollution: causes, eg from chemicals; impacts, eg contamination to local streams and rivers

Air pollution: causes, eg fuel vapours; impacts (airport workers, airport neighbours, climatic conditions)

Visual pollution: causes, eg terminal buildings, from pathway lights; impacts, eg on airport neighbours, on wildlife

Surface travel pollution: causes, eg road congestion, fuel emissions, lack of public transport; impacts, eg land loss, noise, air pollution

3 Know the methods of control and reduction of airport and aircraft pollution

Key environmental performance indicators: current airport policy (noise, emission, water, waste, energy, transport)

Control: International Civil Aviation Organization (ICAO), eg noise certification requirement; BS7750; ISO9000; drainage flows; balancing ponds; energy-saving measurements; wildlife conservation, eg re-siting; zoning (residential property, commercial property)

Reduction: measures for aircraft, eg limits on noisy aircraft, minimum noise routeing procedures; measures for airports, eg preferred runways, introduction of night curfews; planning measures; technological advances, eg to aircraft to reduce noise pollution
4 Understand the positive impacts of aviation and how relationships with the public are maintained

*Positive impacts*: increased and improved accessibility (motorway/road networks, rail links, flights); employment opportunities (airport, airlines, associated businesses); opportunities and improved services for local business, eg increased trade, improved accessibility, facilities and flights

*Public opinion*: protests and pressure groups; role of local authority; public enquiries; media coverage (adverse, advantageous); exhibitions, eg to inform and reassure the local community

*Public relations*: maintaining a good image, eg involvement in community projects; communicating with the public; establishing goodwill; developing solutions to planning and pollution issues; establishing relationships with political parties
In order to pass this unit, the evidence that the learner presents for assessment needs to demonstrate that they can meet all of the learning outcomes for the unit. The criteria for a pass grade describes the level of achievement required to pass this unit.

### Grading criteria

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<tr>
<th>To achieve a pass grade the evidence must show that the learner is able to:</th>
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<tbody>
<tr>
<td><strong>P1</strong> describe airport planning and development processes</td>
<td><strong>M1</strong> explain, using relevant examples, how control and reduction measures have limited the negative effects on the environment of an airport</td>
<td><strong>D1</strong> evaluate the effectiveness of UK airport in of managing negative impacts of aviation</td>
</tr>
<tr>
<td><strong>P2</strong> describe the negative impacts of airports on the environment</td>
<td><strong>M2</strong> analyse the effectiveness of public opinion in the development of airports, with reference to real examples researched</td>
<td><strong>D2</strong> make recommendations for activities for UK airports to undertake in order to positively manage the impacts of aviation.</td>
</tr>
<tr>
<td><strong>P3</strong> identify and describe methods of control and reduction used to reduce negative impacts of airport and aircraft pollution</td>
<td><strong>M3</strong> explain how aviation organisations successfully manage public relations.</td>
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</tr>
<tr>
<td><strong>P4</strong> describe the positive impacts that an airport has and how these can be achieved/maximised</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>P5</strong> explain the impact of public opinion and its effect on public relations activities carried out by aviation organisations.</td>
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</tbody>
</table>
Essential guidance for tutors

Delivery
This unit deals with issues related to airport and aircraft planning, development and the impact on the environment. Delivery should enable learners to undertake research and investigation by visiting airports and by inviting guest speakers from the industry and local authorities (planning and environmental health in particular) and relevant government departments. Learners should visit at least one airport and visits to a second and third airport would be valuable. Where public enquiries are taking place relating to the development of an airport or similar facility, it would be useful for learners to attend meetings to understand the process and give ‘life’ to their research.

Airport development is well documented and learners should have access to information on past development as well as present planning issues and predicted future trends. Tutors should establish links with their nearest airport/s particularly with public relations personnel. Some airports have education units and organised tours for schools and college groups.

The unit lends itself to organised discussions and debates on airport planning and development and the impact on the environment. These issues are always high profile with many interest/pressure groups strongly arguing their cases. The learners should find this very interesting and within the group there will be many different points of view.

This unit also lends itself to presentations of information on a variety of topics and particularly in relation to pollution. There is scope for the production of charts and graphs by ICT.

Visits to airports to observe first hand control and reduction systems in place would be very beneficial. Talking to local residents, businesses and community groups that monitor development and pollution would also benefit learners.

Visits should involve exploring the immediate surroundings of the airport and research into the views of the local community, perhaps through questionnaires and surveys. Local groups may publish their views or give formal and informal talks or presentations.

Assessment
The assessment criteria shown in the grading grid can be grouped together to enable learners to expand on one criterion in order gain higher grades. The links are as follows: P1; P2, P3, M1 and D1; P4, P5, M2, M3 and D2. Where possible learners should be encouraged and given the opportunity to meet the relevant higher grading opportunities at the same time as they attempt the appropriate pass criteria.
UNIT 16: ENVIRONMENTAL IMPACTS OF AVIATION

P1
For P1, learners must describe airport developments fully covering all of the Unit content listed. The development process should be described in general terms with specific examples given to support points where appropriate. Examples should relate to past, present and future developments as appropriate. Learners must show an awareness of how planning laws and regulations have and will affect development of airports and the specific development issues surrounding airport building.

P2 – P3 – M1 – D1
For P2, learners must describe how an airport impacts negatively on the environment — ensuring that they cover all five of the pollution types in the Unit content, describing each of their causes and impacts. To ensure that this criterion is met fully learners should ensure that they describe at least one cause and one effect for each of noise, water, air, visual and surface travel pollution. Learners may like to create posters to display this information in an interesting and informative way. Effects should be in general terms, but learners could use specific examples to support their descriptions if appropriate.

For P3, the initiatives in place to both control and reduce aircraft and airport pollution should be described. Although learners need not cover all of the listed content, in order to demonstrate knowledge to achieve this criterion, they must ensure that at least four methods are clearly described (two from each of control and reduction). Learners should state how control and reduction methods contribute to meeting key environmental performance indicators.

For M1, learners must research a specific airport, and explain how control and reduction measures have limited the negative effects it has on the environment. Learners should combine their general knowledge gained through achievement of P2 and P3 to apply to a specific airport, using appropriate examples to amplify their explanations. An example of an appropriate level of response at this level could be, ‘At airport x the use of a different runway for landing and take off after 2100 hours has had a positive impact on the local area. Complaints from residents about noise fell by over 50 per cent after this was implemented. Even though there are just as many landings and take offs as previously, having them happen two miles further away has made a big difference to people’s views on the noise in the evenings.’

For D1, learners should follow the work done for M1 with an evaluation of the effectiveness of measures used by airports to limit negative impacts of aviation. In order to achieve this criterion learners should demonstrate that they have the ability to be critical and make judgements about airport activities.

P4 – P5 – M2 – M3 – D2
For P4, learners must describe the positive impacts that an airport can have and how these can be achieved and maximised. In order to achieve this criterion, learners should detail at least one example for each of the Unit content specified. Learners should use real examples they have come across for each of these and not merely generally state what the benefits are.
In order to achieve P5, learners should explain the impact that public opinion can have and how this can manifest itself, for example through negative media coverage. Learners should describe in general terms how public opinion is conveyed, covering all of the Unit content. Learners also need to show how this can effect public relations activities carried out by the aviation industry.

To achieve M2, learners must analyse the effectiveness of public opinion on the development of airports using examples for their research. Examples should be used to demonstrate the extent to which public opinion has impacted on the development or operation of airports. Learners’ commentary must draw analysis, and should not merely be a series of case studies or illustrations.

For M3, learners must explain how aviation organisations successfully manage their public relations, they should draw on examples to support their responses. An example of an appropriate level of response for this criterion would be, ‘An effective method for maintaining good PR would be to provide educational materials and activities so that local schools visit and learn about the airport in a positive light. Children may then tell their parents about what they have done and word will travel and therefore highlight positive points about the airport. An example of where this has happened is at Manchester Airport, school groups can arrange an escorted visit where they can learn about a topic linked to what they are doing at school. Children come away from the visit with positive views as they have been allowed to see parts of the airport that might otherwise be closed for public access.’ For this criterion learner should explain how a minimum of three different initiatives could help manage public relations, giving appropriate examples for each.

D2 follows on from work done for M2 and M3. Learners should make realistic recommendations for activities that UK airports could undertake in order to positively manage the environmental impacts of aviation. This could either be practical activities such as altering car park charging to encourage use of public transport or PR related activities such as holding regular public consultation meetings to ensure that local people feel involved with developments.

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

This unit links to the National Occupational Standards in Aviation (Aviation Operations on the Ground) at Level 3. It also links to the following units in the BTEC Nationals in Aviation Operations:

- **Unit 1: The Aviation Industry**
- **Unit 12: Preparation for Working in the Aviation Industry**
- **Unit 17: Airport Operations**.

This unit offers progression from the Level 2 BTEC Firsts in Travel and Tourism and progression to the Level 5 BTEC Higher Nationals in Travel and Tourism Management.

Essential resources

Learners must have access to library and research facilities including internet access, airport and airline publications and airport information.
Indicative reading for learners

Textbooks

Website
www.icao.int International Civil Aviation Organization
Key skills

Achievement of key skills is not a requirement of this qualification but it is encouraged. Suggestions of opportunities for the generation of Level 3 key skill evidence are given here. Tutors should check that learners have produced all the evidence required by part B of the key skills specifications when assessing this evidence. Learners may need to develop additional evidence elsewhere to fully meet the requirements of the key skills specifications.

### Communication Level 3

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<th>When learners are:</th>
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<tr>
<td>• describing the potential impact of airport developments on the local community.</td>
<td>C3.3 Write two different types of documents each one giving different information about complex subjects. One document must be at least 1000 words long.</td>
</tr>
</tbody>
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### Information and communication technology Level 3

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<tr>
<th>When learners are:</th>
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</thead>
</table>
| • explaining the purpose of protests, pressure groups and public enquiries relating to planning and development of airports  
• describing the measurement and control systems that can limit and reduce pollution in an airport environment. | ICT3.1 Search for information using different sources, and multiple search criteria in at least one case.  
ICT3.3 Present combined information such as text with image, text with number, image with number. |
Unit 17: Airport Operations

NQF Level 3: BTEC National

Guided learning hours: 60

Unit abstract

An airport never sleeps; it is a highly complex and vibrant environment with passengers from every nationality passing through its heart seemingly unaware of the diverse range of occupations that strive to make their journey as effortless, efficient and safe and secure as possible. To fully understand how the airport actually works, it must be broken down into its three fundamental areas: the terminal, the ramp and the airfield.

The unit examines the functions of the terminal, its structure, its layout and design. The distinction between the landside and the airside areas will be fully examined. Learners will study the ranges of employment within the airport environment.

Learners will explore operational aspects of an airport relating to the airfield and the ramp and consider the regulations that govern these operations, which include the maintenance of the runways and taxiways, their lighting and visibility and passenger safety.

This unit also looks at the significance of the planning processes that are necessary to avoid congestion at peak times and to allow routine inspection and maintenance activities at slack times. After studying the unit learners will be able to describe how the three areas operate discretely but work together effectively to ensure the smooth transit of passengers to the aircraft and aircraft to destination.

Learning outcomes

On completion of this unit a learner should:

1. Know the physical environment of the terminal
2. Understand factors that affect ramp operations
3. Understand the legal requirements of airfield operations
4. Understand the need for planning in airport operations.
**Unit content**

1. **Know the physical environment of the terminal**

   *Terminal functions*: processing outbound passengers, eg ticket issue and changes, check-in, security procedures; processing inbound passengers, eg customs, immigration, baggage reclaim, onward transport systems

   *Landside operations areas*: viewing area; retail; catering; toilet facilities; banks; information area; accommodation booking/car hire facilities; telephone/internet facilities; first-aid facilities; place of worship; security; passport control; check-in

   *Airside operations areas*: departure lounge; retail; banks; catering; toilet facilities; telephone/internet facilities; VIP/business lounges; boarding gate areas; arrival lounge; transit lounge; flight connections; immigration; baggage reclaim; customs

   *Terminal layout and design*: simple terminal; piers; air bridges; satellites; multiple terminals with access links

   *Staff functions*: handling agents; airlines; other transport operators (rail, bus, parking); airport authority; concessionaires; security; catering; cleaning and maintenance; immigration; customs; baggage handlers; airport police; health workers; emergency services

2. **Understand factors that affect ramp operations**

   *Ramp layout*: open; terminal-served; lighting; markings; airbridges; remote aircraft parking stands

   *Manoeuvring operations*: marshalling signals and procedures; speed of aircraft manoeuvre; radius of aircraft turn; tugs; pushback; powerback; air bridges; auto-levelling devices; centreline guidance; stopping guidance

   *Ramp fuelling procedures*: delivery; storage; dispensing; fuel types; fuel identification

   *Ramp aircraft handling and turnaround*: engineering, eg routine maintenance and checks, de-icing, defect rectification, planned maintenance; cleaning; catering; aircraft loading, eg loadsheet, balance chart, passenger, dangerous goods; coordination of turnaround; health and safety issues, eg foreign object debris (FOD); movement of vehicles; safety clothing
3 Understand the legal requirements of airfield operations

Statutory requirements for the airfield: air navigation order; aerodrome licensing; CAP 168 Licensing of Aerodromes; types of licence; airfield serviceability and inspections; airfield operating requirements; noise certificates; town and country planning (aerodromes); airside driving

Runways and taxiways: aerodrome reference code; runway widths; slope; runway strips; runway end safety areas (RESA); obstacles within the cleared area; taxiways; declared distances; clearway; stopway; paved surface requirements; runway markings

Airfield lighting: eg approach lighting systems, approach slope indicators, precision approach path indicators, runway lighting, taxiway lighting

Airfield safeguarding: surface (take off, approach, transitional, conical); displace threshold and markings; inner horizontal surface; surveying; shielding; public safety zone; unsafe guarded development

Bird control operations: records of sightings; bird strike forms; bird prevention; methods of dispersal

Low-visibility operations: landing aids; requirements (aircraft, airline, aerodrome); ground radar; runway observing points (ROP); obstacle free zone; ground procedures (aircraft, vehicles)

Noise control on an airfield: measurement, eg perceived noise levels in decibels (PNdb); procedures, eg noise abatement; standard flight routeings; movement restrictions; ground procedures; monitoring

4 Understand the need for planning in airport operations

Airport demand: statistical analysis, eg demographics, historical trends

Planning airport scheduling: airport scheduling committees; slot allocation priorities; seasonal variations; daily variations; stand facilities

Planning emergency procedures: implementation; coordination between different operational areas; testing; updating

Areas of operation: handling procedures (passengers, baggage, cargo, transfers); facilities provided for passengers; security issues; airfield operations
In order to pass this unit, the evidence that the learner presents for assessment needs to demonstrate that they can meet all of the learning outcomes for the unit. The criteria for a pass grade describes the level of achievement required to pass this unit.

### Grading criteria

<table>
<thead>
<tr>
<th>Grading criteria</th>
<th>To achieve a pass grade the evidence must show that the learner is able to:</th>
<th>To achieve a merit grade the evidence must show that, in addition to the pass criteria, the learner is able to:</th>
<th>To achieve a distinction grade the evidence must show that, in addition to the pass and merit criteria, the learner is able to:</th>
</tr>
</thead>
<tbody>
<tr>
<td>P1</td>
<td>describe the physical environment of a terminal</td>
<td>M1 explain how the physical environment, staffing and ramp operations can affect airport performance</td>
<td>D1 analyse the effectiveness of airport operations in an airport giving examples of good practice encountered through case study research</td>
</tr>
<tr>
<td>P2</td>
<td>identify staff functions within the airport environment</td>
<td>M2 explain the implications of the legal requirements of airfield operations</td>
<td>D2 evaluate the impact of the planning process on airport operations.</td>
</tr>
<tr>
<td>P3</td>
<td>describe the factors that affect ramp operations</td>
<td>M3 explain how different areas of an airport are involved in the planning process.</td>
<td></td>
</tr>
<tr>
<td>P4</td>
<td>describe the legal requirements of airfield operations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P5</td>
<td>describe methods for planning and forecasting that are carried out in different areas of the airport.</td>
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</tr>
</tbody>
</table>
Essential guidance for tutors

Delivery

For many learners, the airport environment has been restricted to passenger travel experiences with only limited knowledge of its many facets and the diversity of job roles within. This unit aims to change the learner’s perspective by exploring the physical airport environment. The learner will have access to both land and airside to discover these unique functions.

It is essential that visits to airports are incorporated into delivery, with emphasis on the functional areas of the terminal, ramp and the airfield. A visit at the start of this unit will be advantageous and subsequent visits will further enhance the Unit content. Visiting a variety of airports would enable the learner to make comparisons and contrasts. As an airside pass is necessary for access to the ramp and some sections of the terminal, liaison with airport personnel will be necessary.

The variety and amount of airport access will develop learners’ depth of understanding and increase the opportunity to conduct more detailed individual and group research. Learners should be encouraged to approach aviation companies and airports themselves (by email, personal contact or letter), to further enhance their grade achievement and forge understanding. Learners will investigate both the physical environment and areas of employment and gain an insight into how they co-exist. Group debate or simulated activity where learners represent different areas of the airport would help learners consolidate their knowledge. Learners could also create their own terminal environment with small groups working on the individual functions, discovering the implications and necessities for the terminal layout.

Learners will be asked to identify and make the links between the formation of the legal requirements and legislative documentation and the implementation of the airport’s operational procedures. It is therefore important that learners are in the position to research effectively and correctly. There is a lot of theory to learn so contact with aviation personnel should be encouraged.

Learners could be divided into small groups to explore each legal requirement that could then be presented to the others and the resulting facts reviewed for accuracy and relevance. It is essential that learners are taught the most recent version of the relevant legislation.

Learners should be encouraged to access a variety of resources, such as industry publications, eg Flight International and Airports of the World, and the websites of aviation companies, eg Aviance, airports and regulatory bodies, such as the Civil Aviation Authority. Also visits to, or speakers from airlines or aviation handling companies, such as Penauille Servisair or Swissport. Legal requirements should be applied to realistic scenarios that could be achieved through a series of tasks applicable to the operational tasks undertaken in the airport environment; if actual aviation examples can be sourced they can be adapted and used.
Group discussions and presentations can be used to complement theory when studying factors that affect ramp operations. The use of past and current case studies could elucidate aspects as well as forming evidence for contrast and comparison. A visual display of examples of good practice could be compiled to help learners analyse the effectiveness of ramp operations.

An assessment project, investigating the methods and importance of planning in airports or a simulated expansion/upgrade of an airport activity would be ideal evidence for the planning content as these tasks would require the learner to know the legislative requirements as well as be able to apply these requirements to the physical changes of the operational areas.

Assessment

The assessment criteria shown in the grading grid can be grouped together to enable learners to expand on one criterion in order gain higher grades. The links are as follows: P1, P2, P3, M1 and D1; P4 and M2; P5, M3 and D2. Where possible learners should be encouraged and given the opportunity to meet the relevant higher grading opportunities at the same time as they attempt the appropriate pass criteria.

**P1 — P2 — P3 — M1 — D1**

To achieve P1, learners must give a clear description of the airport terminal. The description can be broad and basic rather than in any significant depth, and should be supported by a plan with the functional areas stipulated in the *Unit content* labelled. The description should support the diagram. If the diagram relates to a real airport the plan should be solely devised by the learner.

For P2, learners should identify the staffing roles available within the different functions of the airport. This explanation should relate to the job role and link clearly to where airport staff may work. An example of an appropriate response at this level would be if a learner identified the roles of handling agents and that they work both landside (in check-in) and airside (at the gates and transfer areas). It is not necessary for learners to describe the roles of these staff, and no credit should be given if they do so. P2 evidence may be linked to the P1 airport example for continuity, although all of the *Unit content* needs to be covered.

For P3, learners should describe fully all the factors identified in the *Unit content* and demonstrate they know what is meant by each category in addition to describing the procedures.

To achieve M1, learners must provide reference to a specific airport, either by their own investigation or based on case study. Learners should be critical in their responses and may draw on further examples from other airports to illustrate their points. Further development of this criterion allows the learner to compare and contrast examples of good practice, citing actual aviation evidence that then meets the D1 criterion. Documentation and/or data should be included to support the D1 criterion, giving examples of good practice.

**P4 — M2**

P4 asks the learner to clearly describe the legal requirements of airfield operations. Learners should only describe the most recent versions of legislation.
UNIT 17: AIRPORT OPERATIONS

For M2, the learner should explain the implications of these requirements and how they have affected industry practices. Learners should show evidence of the impact of legal requirements on airports. An example of a response at merit level would be to explain a number of actions that an actual airport has implemented in order to meet the specific requirement. Actual case study examples should be sourced with justifications for the airport’s actions given.

P5 — M3 — D2

P5 asks learners to describe the different ways that planning and forecasting are carried out in different areas of the airport. The description should clearly identify actual planning and forecasting methods linked to specific airport areas.

The learner can achieve M3 by explaining how different areas of an airport are involved in the planning process. It would be useful for the tutor to create scenarios and for the learners to work in small groups and debate how to deal with each category. This could then be incorporated into their individual assignments.

To obtain D2, the learner should evaluate the impact of the planning process, how airports have responded and how successful they have been. An example of an appropriate topic for evaluation would be for learners to discuss the changes in planning emergency procedures since a major incident and how effective these procedures have been in safeguarding airports. Learners could present their findings using a PowerPoint presentation, ensuring that all sources are accurately referenced and included.

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

This unit links to the National Occupational Standards in Aviation (Aviation Operations on the Ground) at Level 3. It also links to the following units in the BTEC Nationals in Aviation Operations:

- Unit 1: The Aviation Industry
- Unit 8: Handling Air Passengers
- Unit 10: Airport Ramp Handling
- Unit 12: Preparation for Working in the Aviation Industry
- Unit 16: Environmental Impacts of Aviation.

This unit offers progression from the Level 2 BTEC Firsts in Travel and Tourism and progression to the Level 5 BTEC Higher Nationals in Travel and Tourism Management.

Essential resources

Learners must have access to a library and research facilities including the worldwide web, industry and airport publications, current legislation and regulations. It is strongly recommended that visits to at least two airports are organised to see Unit content criteria in operation.
Indicative reading for learners

Textbooks


Key skills

Achievement of key skills is not a requirement of this qualification but it is encouraged. Suggestions of opportunities for the generation of Level 3 key skill evidence are given here. Tutors should check that learners have produced all the evidence required by part B of the key skills specifications when assessing this evidence. Learners may need to develop additional evidence elsewhere to fully meet the requirements of the key skills specifications.

<table>
<thead>
<tr>
<th>Communication Level 3</th>
<th>They should be able to develop the following key skills evidence:</th>
</tr>
</thead>
<tbody>
<tr>
<td>When learners are:</td>
<td></td>
</tr>
<tr>
<td>• describing the physical environment of a terminal</td>
<td>C3.1b Make a formal presentation of at least eight minutes using an image or other support material.</td>
</tr>
</tbody>
</table>
| • researching legal requirements of airfield operations | C3.2 Read and synthesise information from at least two documents about the same subject.  
Each document must be a minimum of 1000 words long. |
| • describing the factors that affect ramp operations. | C3.3 Write two different types of documents each one giving different information about complex subjects.  
One document must be at least 1000 words long. |

<table>
<thead>
<tr>
<th>Information and communication technology Level 3</th>
<th>They should be able to develop the following key skills evidence:</th>
</tr>
</thead>
<tbody>
<tr>
<td>When learners are:</td>
<td></td>
</tr>
<tr>
<td>• researching staff functions within the airport environment</td>
<td>ICT3.1 Search for information using different sources, and multiple search criteria in at least one case.</td>
</tr>
<tr>
<td>• describing methods for planning and forecasting that are carried out at the airport.</td>
<td>ICT3.3 Present combined information such as text with image, text with number, image with number.</td>
</tr>
</tbody>
</table>
Unit 18: Team Leadership in the Aviation Industry

NQF Level 3: BTEC National
Guided learning hours: 60

Unit abstract

The aviation environment is busy and those who work in teams rely on each other to carry out their individual roles effectively to meet the tight deadlines necessary in this fast-paced industry. Many organisations work on a shift system, and employees have to be able to work with many different people. It is important that team leaders are adaptable and able to develop their own skills to deal effectively with team members, encouraging and supporting them.

Many entrants into the industry find themselves in a supervisory position very early on in their career, so it is vital that leadership skills are developed at an early stage, in order to aid career progression.

This unit is designed to help learners understand the importance of leading and working in a team. Learners will investigate the different styles of leadership and how they are used in the aviation industry. They will explore effective communication skills and have the opportunity to demonstrate these.

Learners will also explore other skills needed in order to lead a team and to get the best out of its members. In a stressful work situation, learners will need to demonstrate that they are able to remain professional and motivated at all times, and can lead their team through difficult situations. Learners will find out about the many barriers to good teamwork; and consider how to overcome them.

Learning outcomes

On completion of this unit a learner should:
1. Understand the styles of leadership and the role of a team leader
2. Be able to communicate effectively when leading a team
3. Be able to use appropriate skills and qualities to lead a team
4. Understand what makes an effective team leader.
Unit content

1. Understand the styles of leadership and the role of a team leader

   **Leadership styles:** authoritarian; democratic; formal; informal

   **Team leader role:** roles, eg project management; responsibilities, eg to manage budget, to ensure quality; qualities needed, eg adaptability, listening skills, empathy; skills needed, eg communication, delegation; benefits (to organisation, to team members)

   **Benefits of teams:** to organisation, eg efficiency, commitment of staff; to team members, eg shared expertise, personal development

2. Be able to communicate effectively when leading a team

   **Non-verbal:** body language (open, closed); personal presentation; gestures; expressions; listening skills

   **Verbal:** voice (tone, pitch, pace); relevant terminology, eg aviation terms; clear and appropriate to task

   **Communication:** face-to-face; written; presentation; using figures, eg sales presentations

3. Be able to use appropriate skills and qualities to lead a team

   **Skills and qualities:** eg professionalism, approachability, time management, effective listening, commitment, motivational, flexibility, delegation skills, stress management, ability to diffuse conflict, mentoring

   **Team goals:** eg to ensure quality, to solve problems, to perform a routine task, to undertake a non-routine project

   **Processes:** leading team meetings; allocating roles; delegating responsibilities; monitoring progress; evaluating outcomes; liaising with senior staff

4. Understand what makes an effective team leader

   **Barriers to effective performance:** lack of commitment, eg leader, team member; poor communication; lack of appropriate skills; resource issues (financial, physical, staff); personal factors, eg challenges to authority, conflict between team members

   **Evaluation methods:** measurement of goals achieved; measurement of performance (own, team) assessment of skills development needs (own, team); compiling recommendations for future
In order to pass this unit, the evidence that the learner presents for assessment needs to demonstrate that they can meet all of the learning outcomes for the unit. The criteria for a pass grade describes the level of achievement required to pass this unit.

### Grading criteria

<table>
<thead>
<tr>
<th>To achieve a pass grade the evidence must show that the learner is able to:</th>
<th>To achieve a merit grade the evidence must show that, in addition to the pass criteria, the learner is able to:</th>
<th>To achieve a distinction grade the evidence must show that, in addition to the pass and merit criteria, the learner is able to:</th>
</tr>
</thead>
<tbody>
<tr>
<td>P1 describe the styles of leadership and the role of team leader, making reference to the benefits of teams in the aviation industry</td>
<td>M1 compare two different styles of leadership in organisations in the aviation industry</td>
<td>D1 evaluate the effectiveness of two different styles of leadership in organisations in the aviation industry, making suggestions for improvement</td>
</tr>
<tr>
<td>P2 describe types of communication that a team leader would use to lead an effective team</td>
<td>M2 demonstrate effective communication, skills and qualities in leading a team</td>
<td>D2 demonstrate high levels of effectiveness in leading a team and make insightful judgements on performance with recommendations for improvement for both the team leader and the team.</td>
</tr>
<tr>
<td>P3 participate in leading a team in an activity to meet specific goals</td>
<td>M3 analyse own performance in leading a team, suggesting the barriers to effective teamwork and possible solutions.</td>
<td></td>
</tr>
<tr>
<td>P4 describe the barriers to effective teamwork</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P5 describe evaluation methods used to assess effective team leadership.</td>
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</tbody>
</table>
Essential guidance for tutors

Delivery

Working in the aviation industry involves many different areas of work, both in the air and on the ground. Learners need to research a variety of organisations to see how different leadership styles are used. A visit to an airport to observe teams in action or a guest speaker coming in to talk about how to lead a team may assist with leadership styles and roles.

This unit teaches the importance of working as part of a team and how to be an effective team leader. Working in the aviation industry, whether it is for an airline or in an airport, will involve teamwork. In any working area, time is often limited and teams have to work under pressure — ground crew turning an aircraft around, cabin crew servicing a flight, and even hospitality teams ensuring passengers are served quickly in order to catch their flight.

Learners should research the different styles of leadership and their effectiveness. Tutors could use television programmes to show the different types of leadership styles, eg *The Office*, or *Airport*. These could then be discussed as to their effectiveness in motivating and managing teams and learners may then make suggestions on where or when they have seen or worked in effective teams.

A range of team exercises may be used to develop learners’ understanding and confidence in working as a team, for example using survival games where teams have to decide on what key items are needed to survive different scenarios, eg stranded at sea, on an island or on the moon. Another option is the *egg game* — learners are given a raw egg, some paper, paperclips, sticky tape (you may substitute some items) and have to build a device to protect the egg and then drop it from a height to see if it survives (shell doesn’t break).

A visit to an airport to observe different work situations and how staff (security, passenger service agents etc) work in teams, would be useful for learners who have little experience of aviation organisations. Guest speakers from the aviation industry could talk about how they use teamwork in their job role and also the barriers they have encountered and how they have overcome them.

Learners should also understand the importance of communication and how this affects team performance by investigating body language, speaking and listening skills. Tutors could use games and exercises to demonstrate speaking and listening skills, there are many examples of these available in tutor resource packs or on the internet.

Learners should take part in a series of team-building exercises, each having the opportunity to take a leader role. These exercises could either be class based using simulated aviation situations or as part of a team event, eg planned outing or sports activity. They should be encouraged to build their interpersonal skills and team-building techniques, recognising the importance of team motivation using encouragement and support to achieve the team’s objectives.
Teams often encounter barriers that affect the way they work. These barriers may be from inside the team, e.g., lack of motivation or commitment, conflict or leadership challenge; or they may also be from an external source, e.g., legislation or resources.

Learners should investigate the different situations that could arise and how to resolve them. They should also understand that not all barriers can be overcome and teams may have to adapt their own working methods to resolve them.

Using case studies to demonstrate the barriers, learners could be put into small groups to identify them and work out possible resolutions. These could then be discussed as a class to assess each group’s suggestions.

**Assessment**

The assessment criteria shown in the grading grid can be grouped together to enable learners to expand on one criterion in order gain higher grades. The links are as follows: P1, M1 and D1; P2, P3 and M2; P4, P5, M3 and D2. Where possible learners should be encouraged and given the opportunity to meet the relevant higher grading opportunities at the same time as they attempt the appropriate pass criteria.

To achieve this unit, learners must demonstrate team leadership in a real situation. Simulation of this skill is not appropriate. However, learners could demonstrate the skill in a centre-based situation, e.g., arranging an event, rather than a work environment.

**P1 — M1 — D1**

To achieve P1, learners should describe the different styles of leadership and the role of the team leader, including the benefits of teams to aviation organisations. Learners may use examples from aviation organisations, e.g., airlines, airports and ground handlers, or they could be from ancillary organisations such as airport carparking companies.

For M1, learners should compare two different leadership styles in the aviation industry. Comparisons should point out the similarities and differences in the two styles used, noting any impacts that these styles may have on the roles they perform. An example of an appropriate level of response for M1 would be for a learner to point out that, ‘Unlike manager y, manager x has a very autocratic style. This means he usually gets tasks done on time as he directs the staff to exactly what needs to be done, and observes them closely in completing their roles.’ Learners could use examples observed from a visit to an aviation organisation, or a guest speaker visit. Alternatively, they could research the leadership styles of individuals in the industry via secondary research.

For D1, learners should consider how effective the styles make the team leaders they have studied. An example of an appropriate response at this level could be, ‘Manager x is autocratic, so although things run smoothly when he is there, if he is away, the team often fail in their tasks because they are used to being told what to do all the time so have built up no autonomy or independent working skills’.
P2 — P3 — M2

To achieve P2, learners should describe the different ways communication is used to lead and motivate a team. Responses should be given within the context of aviation; for instance, learners could devise a training manual for staff working in the industry or give a talk to new recruits.

By taking the team leader role, learners should demonstrate their skills and qualities in leading a team in a real situation, if necessary they could share the role of team leader with others in their group on a particular project. The level of skills used will determine whether the learner is able to achieve P3 (by using basic skills) or M2 (where they should show effective skills). For both pass and merit criteria, learners should demonstrate that they are leading the team towards a specific goal or goals. This could be determined by the learners themselves, or given in a client brief.

For M2, learners will demonstrate their own communication skills in leading a team. Evidence for P3 and M2 should be witnessed by the assessor, or another appropriate observer, and an observation sheet should be completed and signed by the assessor detailing evidence that was presented for this criteria, ie how and when effective communication skills were used. Where learners have worked as a group, each learner must submit their own work as evidence, indicating clearly where they have achieved specific criteria. These criteria also link to D2.

P4 — P5 — M3 — D2

To achieve P4, learners should describe the barriers that could affect the way a team operates. This could be from information gathered from an airport or guest speaker visit, or from a selection of case studies. The barriers should be described in general terms, although specific examples may be given where they are appropriate, but only to support descriptions, not instead of them. An appropriate response at this level would be, ‘Some staff may not have the skills necessary to complete a task and this may mean the team could fail. For example, if extra staff were used to cover check in on a bank holiday when it was really busy and they had not been properly trained on the computer system, then they will go slowly and make mistakes which could actually make the situation worse.’

For P5, learners should describe evaluation methods that can be used to assess effective team leadership. This should relate to their own performance in a leadership role. In describing the evaluation methods, learners should indicate how these can be carried out. An example of a suitable level of response for this criterion could be, ‘The teams performance can be measured by using quantitative methods, eg how long it took them to complete the task or if they stuck to the budget, and qualitative methods, eg undertaking peer feedback interviews.’

For M3, learners should demonstrate analytical skills and critical awareness of the performance (of self and team), and link these to barriers. An appropriate level of response could be, ‘The team didn’t perform well on the marketing activity because the posters they produced were of a poor quality. I think they tried as hard as they could but my team didn’t really have the ICT skills required to make good marketing materials. In the future, I might ask someone else who has the skills we need to do this.’
For D2, responses should be insightful and show a level of critical and creative thinking as a team leader. Evidence for part of D2 should be in the form of witness testimony or observation sheets that detail how and why a learner has performed at this level. Examples of evidence for this could include situations where a learner has used interpersonal skills to resolve conflicts within the team, or where they have managed to motivate their team very effectively without very much intervention from others.

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

This unit links to the National Occupational Standards in Aviation (Aviation Operations on the Ground) and (Cabin Crew) at Level 3. It also links to the following units in the BTEC Nationals in Aviation Operations:

- **Unit 1: The Aviation Industry**
- **Unit 3: Meeting Customer Needs in the Aviation Industry**
- **Unit 8: Handling Air Passengers**
- **Unit 12: Preparation for Working in the Aviation Industry.**

This unit offers progression from the Level 2 BTEC Firsts in Travel and Tourism and progression to the Level 5 BTEC Higher Nationals in Travel and Tourism Management.

Essential resources

Learners should have access to information from a range of sources, including television programmes, eg *Airport*; the internet, visit to an airport or guest speakers.

Indicative reading for learners

**Textbook**

Key skills

Achievement of key skills is not a requirement of this qualification but it is encouraged. Suggestions of opportunities for the generation of Level 3 key skill evidence are given here. Tutors should check that learners have produced all the evidence required by part B of the key skills specifications when assessing this evidence. Learners may need to develop additional evidence elsewhere to fully meet the requirements of the key skills specifications.

### Communication Level 3

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<td>• describing the styles of leadership and the role of a team leader, with reference to the benefits of teams to the aviation industry.</td>
<td>C3.3 Write two different types of documents each one giving different information about complex subjects. One document must be at least 1000 words long.</td>
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### Information and communication technology Level 3

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<tr>
<td>• describing types of communication a team leader would use to lead an effective team.</td>
<td>ICT3.3 Present combined information such as text with image, text with number, image with number.</td>
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### Improving own learning and performance Level 3

<table>
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<tr>
<th>When learners are:</th>
<th>They should be able to develop the following key skills evidence:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• planning to lead a team</td>
<td>LP3.1 Set targets using information from appropriate people and plan how these will be met.</td>
</tr>
<tr>
<td>• participating in leading a team in an activity to meet specific goals</td>
<td>LP3.2 Take responsibility for your learning, using your plan to help meet targets and improve your performance.</td>
</tr>
<tr>
<td>• assessing own performance in leading a team.</td>
<td>LP3.3 Review progress and establish evidence of your achievements.</td>
</tr>
</tbody>
</table>
## Working with others Level 3

<table>
<thead>
<tr>
<th>When learners are:</th>
<th>They should be able to develop the following key skills evidence:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• planning team activity and goals</td>
<td>WO3.1 Plan work with others.</td>
</tr>
<tr>
<td>• participating in leading a team in an activity to meet a specific goal</td>
<td>WO3.2 Seek to develop cooperation and check progress towards your agreed objectives.</td>
</tr>
<tr>
<td>• assessing own performance in leading a team.</td>
<td>WO3.3 Review work with others and agree ways of improving collaborative work in future.</td>
</tr>
</tbody>
</table>
Unit 19:
Conflict Management for Aviation

NQF Level 3: BTEC National
Guided learning hours: 60

Unit abstract
The aviation industry can be a stressful environment, not only for passengers but also for those who work for the wide variety of companies that are involved in air travel. Employees play an important part in retaining customers for their organisation, ensuring that the passengers have a safe and stress-free journey.

This unit teaches learners how to recognise and deal with conflict in the aviation industry and how it affects not only the company but also the employees and the customers involved.

This unit examines the needs of different passenger groups, such as business travellers, senior citizens, and people with medical conditions, learning difficulties and/or physical disabilities.

Learners will investigate how conflict situations can arise in aviation and how to recognise what triggers them. This unit focuses on how learners can identify the different causes, including medical and special needs, as this is not always easy.

Learners will learn how to be able to resolve conflict as quickly as possible and will develop the skills needed to deal with different situations, such as distressed passengers. They will look at all the possible options to prevent them from happening and recommendations for solutions.

Learners will have the opportunity to take part in role-play situations in order to demonstrate their skills and learn the correct way to deal with conflict.

Learning outcomes
On completion of this unit a learner should:

1. Understand the types and causes of conflict situations in aviation
2. Know the early signs of conflict situations in aviation and common techniques for resolving them
3. Be able to communicate to resolve conflict situations in aviation
4. Understand immediate and long-term measures used to follow up conflict situations in aviation.
Unit content

1 **Understand the types and causes of conflict situations in aviation**

*Types:* physical attacks; verbal abuse; minor incident; major incident; airborne; ground

*Causes:* alcohol; lost baggage; lost passengers; missed connections and departures; cancelled and delayed flights; medical; poor communication (of staff, of organisation)

2 **Know the early signs of conflict situations in aviation and common techniques for resolving them**

*Medical:* death; acute, eg heart attack, stroke, choking; known conditions, eg epilepsy, diabetes, asthma; mental, eg phobia, stress

*Confrontation:* raised voices; rudeness; negative body language; closed gestures; abusive language; invasion of personal space; threatening gestures

*Alcohol and substance abuse:* slurred speech; agitated behaviour; odour; raised voices; inappropriate behaviour; heavy alcohol consumption

*Resolution techniques:* physical, eg restraint, withdraw alcohol service, basic first aid; verbal, eg reasoning, reassurance, empathy; referral to third party, eg supervisor, police, airport security

3 **Be able to communicate to resolve conflict situations in aviation**

*Communication:* vocal (tone, pitch, volume); non-verbal, eg open gestures, positive body language, facial expression; verbal, eg use of language; active listening

*Resolutions:* following company procedures, eg offloading baggage of missing passengers; keeping passengers informed; isolating situation; dealing with medical emergencies, eg administering first aid; meeting individual customer needs, eg reallocating seats; extreme measures, eg reasonable methods of restraint

*Barriers to effective communication:* negative body language; closed gestures; language spoken; poor listening skills; no eye contact

4 **Understand immediate and long-term measures used to follow up conflict situations in aviation**

*Immediate measures:* eg report to supervisor, contact emergency services, deal with other passengers, complete accident and incident forms

*Long-term measures:* staff development and training; changes to company policy; prosecution; excluded passengers; notifying third parties
In order to pass this unit, the evidence that the learner presents for assessment needs to demonstrate that they can meet all of the learning outcomes for the unit. The criteria for a pass grade describes the level of achievement required to pass this unit.

<table>
<thead>
<tr>
<th>Grading criteria</th>
<th>To achieve a pass grade the evidence must show that the learner is able to:</th>
<th>To achieve a merit grade the evidence must show that, in addition to the pass criteria, the learner is able to:</th>
<th>To achieve a distinction grade the evidence must show that, in addition to the pass and merit criteria, the learner is able to:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>P1</strong></td>
<td>describe types and causes of conflict situations</td>
<td>M1 explain why different resolution techniques are adopted in dealing with different types of conflict situations</td>
<td>D1 evaluate your performance in dealing with conflict situations and make recommendations for improvements</td>
</tr>
<tr>
<td><strong>P2</strong></td>
<td>describe the early signs of conflict situations and common resolution techniques for dealing with them</td>
<td>M2 demonstrate effective communication skills in three conflict situations in the aviation industry</td>
<td>D2 justify immediate and long-term measures to follow up conflict situations.</td>
</tr>
<tr>
<td><strong>P3</strong></td>
<td>demonstrate communication skills in order to resolve three conflict situations in aviation</td>
<td>M3 explain how measures to follow up conflict situations will reduce future incidents.</td>
<td></td>
</tr>
<tr>
<td><strong>P4</strong></td>
<td>describe the barriers to effective communication in resolving conflict situations in aviation, giving examples where appropriate</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>P5</strong></td>
<td>describe immediate and long-term measures used in aviation to follow up conflict situations.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Delivery

This unit teaches the causes of conflict in the aviation industry, and how to deal with these situations when they arise. Learners should understand why conflict management is particularly important in air travel given its nature, and that passengers have high expectations when travelling and often do not understand the reasons why travel may be disrupted.

Start this unit by teaching the different types of conflict that exist and the most common causes of this conflict. Often ‘air rage’ is cited as a common type of conflict in this industry, when in fact much conflict happens on the ground during the check-in procedure. Conflict can happen between individual passengers, between passengers and staff or even between staff members who may have conflicts of interest in doing their jobs. Conflict may show itself in different ways, including verbal complaints or behaviour; learners should understand that passenger behaviour may not always be caused by anger or intoxication, and that the passenger may have some medical reason.

Learners need to be able to recognise the causes of different types of conflict, to understand why some illnesses may have symptoms that give the impression the passenger is drunk, eg diabetes — slurred speech, unsteady walking, etc. Learners could work in small groups to research and build up a selection of information that could be used during role-play situations. There are several good training videos that are used to train staff in recognising potential conflict situations in all sorts of contexts (not just aviation) and these would be useful for learners.

Learners would benefit from a visit to an airport to observe different areas, such as passengers checking in for flights, information desks, security checkpoints and hospitality outlets, eg fast food areas, restaurants or pubs. Learners can observe how staff deal with passengers; for instance, the information desk has to deal with inbound tourists who may not speak English, as well as outbound passengers leaving the country. Learners could use this information to complete a conflict ‘risk assessment’, highlighting all the areas where conflict may arise, and how it could be avoided.

Learners should investigate the early signs of conflict and understand that when a situation gets out of hand it can be harmful to an organisation, so every effort should be made to avoid confrontation in the first place. This unit could be linked to Unit 3: Meeting Customer Needs in the Aviation Industry, as it is important for the learner to understand passenger needs and expectations, and that often the appearance of staff, their behaviour and surroundings will give passengers confidence in the company and stop conflict arising in the first place. In learning about the early signs of conflict, learners could each be given different types of symptoms to demonstrate (eg raised voice, agitated, slurred speech), which they could then demonstrate for other learners who need to consider what type of conflict situation might be about to occur. The group could act out and evaluate possible resolution techniques. TV programmes where conflict management techniques are used, such as Airline will be useful in giving learners ideas on what can be done.
Learners should investigate the different ways of dealing with conflict including compromise and avoidance. Learners need to understand that certain situations encountered by staff should be referred to a line manager to resolve.

Many of the communication techniques mentioned in this unit will have been dealt with to some extent in Unit 3: Meeting Customer Needs in the Aviation Industry. Learners should be taken through a range of confidence-building techniques as both individual and team-building exercises. Through role play learners can practise dealing with different types of conflict (e.g., bereavement, illness, delayed or cancelled flights).

When a conflict situation has occurred, procedures have to be followed as defined by the organisation (health and safety, reporting to security/police etc.), which may be a written report or a risk assessment. Learners could design a simple form to use in the role plays, such as an accident or incident form. When learning to deal with conflict situations, learners should be able to identify situations when first aid may be used, but they are not required to use first-aid techniques themselves in this unit.

Guest speakers, such as passenger service agents or cabin crew, could be used to demonstrate their experiences of different conflict situations, such as a missed departure or a nervous passenger on a flight. When completing their assessment evidence, learners could draw from these examples.

When learning about the immediate and long-term measures used to follow up conflict situations, wherever possible learners should look at real examples from the aviation industry. Examples of this could be gained by looking through past newspaper articles on passengers that have been prosecuted for their part in conflict situations. In addition, guest speakers from industry will be able to talk about their company policies in respect of excluding passengers or updating staff training procedures. It would be useful to give learners scenarios or pen portraits in which they suggest measures that they would put in place, these could then be evaluated by the group.

Assessment

The assessment criteria shown in the grading grid can be grouped together to enable learners to expand on one criterion in order gain higher grades. The links are as follows: P1, P2 and M1; P3, P4, M2 and D1; P5, M3 and D2. Where possible learners should be encouraged and given the opportunity to meet the relevant higher grading opportunities at the same time as they attempt the appropriate pass criteria.

P1 — P2 — M1

This unit covers lots of different conflict situations, not merely those occurring on board an aircraft such as ‘air rage’. There are many organisations in the aviation industry, and learners need to investigate different ones in order to find a range of situations that could be used as examples. The evidence produced for P1 must clearly describe the types of conflict and the causes to cover all of the listed Unit content.
In describing the early signs of conflict situations for P2, learners should summarise common medical symptoms that staff may encounter in aviation contexts. However, learners should not be describing first-aid techniques, merely that first aid would be required. They must also describe all early signs of confrontation and alcohol and substance abuse as listed in the Unit content. For all of the early signs learners should suggest techniques commonly used to deal with them. At pass level these can be fairly basic responses; for example if a nervous flyer was looking agitated, a common technique would be for cabin crew to reassure them that there were no technical problems with the flight.

For M1, learners should explain why different techniques are used for different situations, for example in what situations it is necessary to use physical restraint, eg when a physical confrontation is imminent, and when you should merely separate passengers, eg by moving seats. To achieve this criterion, learners could be given scenarios or pen portraits in which they have to suggest and justify an appropriate response to situations. Learners should do this for a minimum of three different situations.

P3 — P4 — M2 — D1

To achieve P3, learners should demonstrate competence in using communication skills to resolve conflicts. Learners should take part in a minimum of three situations in which they are resolving conflict; these may be real or simulated. Across the three situations learners should cover all the Unit content under Resolutions.

For P4, learners should describe all of the barriers to effective communication, making sure that their descriptions are in the context of aviation. For example, learners could describe how poor communication might occur at check-in if staff members do not make eye contact with passengers when explaining that a flight has been delayed.

For M2, learners should demonstrate that they have high levels of effectiveness, this could include demonstrating confidence, diplomacy or assertiveness in order to resolve a conflict situation. Evidence for P3 and M2 must be supported by a detailed observation sheet signed by the assessor indicating how the learner has met the criteria.

For D1, learners should evaluate their strengths and make realistic and considered recommendations of how they could improve their performance.

P5 — M3 — D2

For P5, learners should refer to realistic measures used in the industry to follow up conflict situations. Immediate measures will vary depending on the situation, and learners could use situations from P3 as a prompt. A minimum of three immediate measures and all long-term measures listed in the Unit content should be described.

For M3, learners should explain how three measures (either in general terms or using specific examples) are used to reduce future incidents of conflict. An appropriate response at this level could be that on some routes that are popular with groups of young people, some scheduled airlines have introduced a ‘paying bar service’ to dissuade passengers from drinking to excess, and this will reduce the incidents of drunk passengers on board these flights.
For D2, learners should expand on the evaluation of their performance in dealing with three conflict situations produced in D1, and justify at least one immediate and one long-term measure for each situation. For each measure learners should justify how this will reduce future occurrences of conflict.

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

This unit links to the National Occupational Standards in Aviation (Aviation Operations on the Ground) and (Cabin Crew) at Level 3. It also links to the following units in the BTEC Nationals in Aviation Operations:

- **Unit 1: The Aviation Industry**
- **Unit 2: Health, Safety and Security in the Aviation Industry**
- **Unit 3: Meeting Customer Needs in the Aviation Industry**
- **Unit 8: Handling Air Passengers**
- **Unit 12: Preparation for Working in the Aviation Industry.**

This unit offers progression from the Level 2 BTEC Firsts in Travel and Tourism and progression to the Level 5 BTEC Higher Nationals in Travel and Tourism Management.

**Essential resources**

Learners should have access to information from a range of sources, including television programmes, eg *Airport*; the internet, guest speakers or travel trade newspapers.

**Indicative reading for learners**

**Textbooks**


Key skills

Achievement of key skills is not a requirement of this qualification but it is encouraged. Suggestions of opportunities for the generation of Level 3 key skill evidence are given here. Tutors should check that learners have produced all the evidence required by part B of the key skills specifications when assessing this evidence. Learners may need to develop additional evidence elsewhere to fully meet the requirements of the key skills specifications.

<table>
<thead>
<tr>
<th>Communication Level 3</th>
<th>They should be able to develop the following key skills evidence:</th>
</tr>
</thead>
<tbody>
<tr>
<td>When learners are:</td>
<td></td>
</tr>
<tr>
<td>• describing the types and causes of conflict situations</td>
<td>C3.1a   Take part in a group discussion.</td>
</tr>
<tr>
<td>• completing appropriate documentation to report a conflict situation</td>
<td>C3.3   Write two different types of documents each one giving different information about complex subjects. One document must be at least 1000 words long.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Information and communication technology Level 3</th>
<th>They should be able to develop the following key skills evidence:</th>
</tr>
</thead>
<tbody>
<tr>
<td>When learners are:</td>
<td></td>
</tr>
<tr>
<td>• explaining techniques for dealing with symptoms of conflict situations</td>
<td>ICT3.3 Present combined information such as text with image, text with number, image with number.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Problem solving Level 3</th>
<th>They should be able to develop the following key skills evidence:</th>
</tr>
</thead>
<tbody>
<tr>
<td>When learners are:</td>
<td></td>
</tr>
<tr>
<td>• dealing with conflict situations in aviation.</td>
<td>PS3.1 Explore a problem and identify different ways of tackling it.</td>
</tr>
</tbody>
</table>
Unit 20: First Aid and Health for Aviation

NQF Level 3: BTEC National
Guided learning hours: 60

Unit abstract
Recent years have seen an increasing awareness across the aviation industry of the need to provide comprehensive training in respect of responding to incidents needing first-aid care. Because of the increasing expectation within society that thorough provision is made for first aid where a duty of care can be identified, employees within the aviation industry need to be equipped to meet this need.

Learners will need to learn the regulations and protocols relevant to health and first-aid provision in the aviation industry, both at a basic and advanced level.

Learners will need to be proficient in first-aid care in all aspects of the aviation environment (on the ground and in the air). Knowledge of current best practice protocols, either general industry standard or locally adopted, is crucial to the effective provision of care. Sufficient knowledge of the human body’s responses to the aviation environment, accompanied by insight into how it responds to injury or illness will ensure that appropriate actions are taken in dealing with incidents.

Learners will investigate the health and safety hazards within the aviation working environment. Recognition of health hazards particular to and prevalent in the aviation environment; such as deep-vein thrombosis (DVT), heat exhaustion and hypoxia, is important but the practical care given to the casualty will be the determining factor in any review of the provision of that care.

To achieve this unit, learners must have passed the IHCD First Person on Scene (FPOS) Award (Intermediate). This unit does not constitute a licence to practice first aid in the aviation industry. Learners who achieve this unit do so, having demonstrated a specific level of competence in FPOS at the time of assessment. Learners are responsible for ensuring they keep this, or any other first-aid qualification, up to date to ensure their professional competence.

Learning outcomes
On completion of this unit a learner should:
1 Understand the principles and priorities of first aid in relation to the airline industry
2 Know how the human body responds to injury and illness
3 Be able to use standard protocols to provide basic life support for passengers and colleagues
4 Be able to provide, or arrange for, advanced life support and care for passengers and colleagues.
Unit content

1 Understand the principles and priorities of first aid in relation to the aviation environment

Principles and priorities of first aid: preserve casualty’s life; prevent condition worsening; promote recovery of casualty; duty of care; personal safety; systematic and appropriate responses; pre-hospital environment considerations, eg scene safety, control of infections, safe moving and handling; recognition of limitations of own training and responsibility

First-aid incidents: severity of incident, eg minor/serious; type of incident, eg illness/injury, adult/child; location of incident, eg ground, air, indoor, outdoor

Monitoring of casualties: recognition of baseline normal responses; vital signs monitoring; incidents or trends injurious to health; recognition of mechanism of injury

Aviation environment: in the air; on the ground

2 Know how the human body responds to injury and illness

Body systems: basic knowledge of body systems, eg skeletal, muscular, circulatory, respiratory, nervous, digestive system and abdominal cavity, skin; relationships between systems, eg muscular and skeletal

Body response: adaptation to environment, eg dehydration, heat exhaustion; clotting; shunting; compensation; levels of response (AVPU, Glasgow coma scale); responses to toxins, eg excess alcohol, gases, solvents, ingested contaminants

Diagnostic terminology: eg bradycardia, tachycardia, hypoxia, cyanosis, hypertension

3 Be able to use standard protocols to provide basic life support for passengers and colleagues

Patient assessment: communicating with patients; patient examination; assessment

Respiration and airway management: causes of blocked airway; opening and maintaining a clear airway; choking; recognition of respiratory problems; common breathing difficulties

Basic life support: adult life support; recovery position; open airway position

Defibrillation: automated external defibrillation

Circulation issues and shock: recognition and initial care (haemorrhage, bleeding, shock, fainted)
Medical-related emergencies: recognition and initial care of conditions (heart attack, angina, diabetes, stroke, seizure, epilepsy, unconscious patient, asthma, anaphylaxis)

Trauma-related emergencies: recognition and initial care of injuries (bones, joints, tendons, ligaments, burns, scalds, other trauma related injuries); skeletal stabilisation

4 Be able to provide, or arrange for, advanced life support and care for passengers and colleagues

Incident management: legal reporting responsibilities; triage of multiple casualties; post-incident procedure

Communications: with patients, eg initial assessment, primary and secondary surveys; with definitive pre-hospital care providers, eg ambulance technicians, paramedics, doctors

Advanced airway management: use of suction devices; removal of crash helmets; use of oro-pharyngeal airways; oxygen supplementation; ventilation support; bag/valve/mask

Advanced life support: child and infant life support; advanced defibrillation; recognise normal and abnormal heart rhythms; assisting paramedic or other suitably qualified medical professional as directed
In order to pass this unit, the evidence that the learner presents for assessment needs to demonstrate that they can meet all of the learning outcomes for the unit. The criteria for a pass grade describes the level of achievement required to pass this unit.

### Grading criteria

<table>
<thead>
<tr>
<th>To achieve a pass grade the evidence must show that the learner is able to:</th>
<th>To achieve a merit grade the evidence must show that, in addition to the pass criteria, the learner is able to:</th>
<th>To achieve a distinction grade the evidence must show that, in addition to the pass and merit criteria, the learner is able to:</th>
</tr>
</thead>
<tbody>
<tr>
<td>P1 describe the principles and priorities used in responding to first-aid incidents in the aviation environment</td>
<td>M1 explain how the principles of first aid may differ in four different airborne situations</td>
<td>D1 evaluate own performance in delivering basic and advanced life support and care.</td>
</tr>
<tr>
<td>P2 describe how the human body responds to injury and illness</td>
<td>M2 analyse illness and injury incidents explaining how the human body responds to first aid in the air.</td>
<td></td>
</tr>
<tr>
<td>P3 provide evidence of holding a current* FPOS Award (Intermediate) qualification to demonstrate appropriate protocols for basic life support</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P4 provide evidence of holding a current* FPOS Award (Intermediate) qualification to demonstrate the ability to select and apply appropriate advanced life support and care.</td>
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</tr>
</tbody>
</table>

* The FPOS Award (Intermediate) qualification must be current and valid at the time of certification of BTEC National qualification.
Essential guidance for tutors

Delivery

Learners undertaking this unit should be studying for the FPOS Award (Intermediate). Those teaching and assessing this unit should be appropriately qualified and recognised FPOS trainers. It is possible to reinforce and contextualise this learning by aviation industry-specific knowledge and theory inputs covering human physiology as it relates to this industry. Within this delivery the exposure of the learners to aviation industry working environments should be prioritised to initiate thorough understanding. This could be achieved by the use of real or simulated air cabins to demonstrate first-aid procedures in this environment.

A visit to an airport is essential to help learners identify key health, safety and security hazards first hand. Learners can use information gained on such visits to inform the scenario-based first-aid training sessions.

The development of the learner’s communication and leadership skills will be greatly enhanced by appropriate scenario-based training within this unit. Learners will be expected to participate actively in highly practical scenario-based training with realistic outcomes and feedback being given.

Learning outcome 2 requires that learners are able to describe how the human body responds to injury and illness. Learners could take part in regular short written ‘tests’ to check their knowledge and understanding of the human body. Centres may already have a bank of knowledge assessments used by other qualifications or curriculum areas for assessing this aspect which may be suitable for this unit.

For learning outcomes 3 and 4, it is recommended that a range of scenarios as outlined in the Unit content would form the basis of any methodical assessment. FPOS identifies scene safety and prioritisation of response as key criteria in assessing competence. Evidence for this component will principally be by observation of competence within practical scenario-based testing but some additional evidence could be gained through paper-based scenario assessments. Implicit within this response is a basic knowledge of the legislation and regulations regarding first aid. More importantly for the learner is that they have a clear understanding of the scope and limitations of the actions that they can take. This understanding is best assessed throughout the practical scenarios wherein issues can be clearly highlighted.

As P3 and P4 are assessed by the use of these practical scenarios in conjunction with clear protocol sheets that are contextualised for the location, casualty type or injury/illness on which the learner is being assessed. Experienced assessors will be able to identify where learners can provide basic care and where advanced care is required, recognise their limitations in respect of ability or resources and arrange for swift intervention by other appropriate persons.
Assessment

Learners cannot pass this unit without holding a current, valid IHCD FPOS Award (Intermediate). Assessors must ensure that this certificate is presented by the learner as part of their portfolio of evidence.

The assessment criteria shown in the grading grid can be grouped together to enable learners to expand on one criterion in order gain higher grades. The links are as follows: P1 and M1; P2 and M2; P3, P4 and D1. Where possible learners should be encouraged and given the opportunity to meet the relevant higher grading opportunities at the same time as they attempt the appropriate pass criteria.

**P1 — M1**

To achieve P1, learners should describe the principles and priorities in responding to first-aid incidents in the aviation environment. Scenarios set should ensure that learners cover all essential criteria. Learners’ responses to this criterion can be in general terms, although where examples are used to support descriptions they should be from aviation scenarios.

To achieve M1, learners must explain how principles of first aid may differ in situations when an aircraft has taken off. This may best be done by giving learners case studies in which they need to explain how they would interpret and adapt the principles. For instance, for P1, learners will have explained actions that can be taken to promote recovery, such as placing a casualty in the recovery position. For M1, however, given a scenario of a passenger on a window seat of an aircraft having a seizure, learners need to say how they would adapt to that situation. To achieve M1, learners should explain how they would adapt the principles in a minimum of four different scenarios.

**P2 — M2**

For P2, learners should describe how the human body responds to injury and illness. Descriptions do not need to be applied to an aviation environment for this criterion. Where appropriate, learners should provide diagrams and charts to aid in their descriptions. Where diagrams are used, they need not have been drawn by the learner by hand but descriptions that accompany them should be the learner’s own.

For M2, learners should build on the evidence presented for P2 and analyse how being in the air may affect the responses of the human body.

**P3 — P4 — D1**

For P3 and P4, learners must demonstrate basic life support protocols and advanced care procedures and pass the FPOS Award (Intermediate). Assessors must be qualified to deliver and assess FPOS, and assessment must take place in an FPOS registered centre. In addition to the certificate of the FPOS Award (Intermediate), evidence could be in the form of observation sheets that indicate how and why the learner has achieved the criteria. Photographs can be used as additional evidence, but they must be labelled clearly to indicate who the learner is and what protocol or procedure they are demonstrating.

To achieve D1, learners should evaluate their own performance in delivering both basic and advanced life support and care. This should include saying what they did well and areas that need improvement, for example clearer communication with casualties or faster indications of vital signs.
Links to National Occupational Standards, other BTEC units, other BTEC qualifications and other relevant units and qualifications

This unit links to the National Occupational Standards in Aviation (Aviation Operations on the Ground and Cabin Crew) at Level 3. It also links to the following units in the BTEC Nationals in Aviation Operations:

- Unit 1: The Aviation Industry
- Unit 4: Air Travel Information
- Unit 12: Preparation for Working in the Aviation Industry.

It is also mapped to the Edexcel IHCD First Person on Scene (FPOS) Award (Intermediate).

Essential resources

Many of the learning outcomes for this unit require learners to undertake highly practical skills-based training and assessment. To enable practical skills to be developed effectively learners should be introduced to as many different simulated first-aid situations as possible, eg adult, child, minor, severe. To this end the institution needs sufficient resources to teach first aid, including visual and written materials, bandages and resuscitation training mannequins (advised ratio of mannequins to learners is 1:2). The adoption by the institution of a systems-based training methodology would enable a framework for quality delivery to current best practice standards. In addition to the basic resource requirements to deliver quality first-aid training, the following items should be available in sufficient quantity to provide learners with realistic training opportunities.

- Automated external defibrillator
- Bandages (selection)
- Defibrillator pads
- Pocket mask
- Resuscitation mannequin (1:2 learners)
- Bag/valve/mask
- Crash helmets (selection)
- Oro-pharyngeal airways (selection)
- Oxygen equipment
- Suction device
- Rhythm simulators
- Splinting materials

Indicative reading for learners

*First Aid at Work: Health and Safety (First Aid) Regulations (1981) and Guidance (HSE, 1997)* ISBN 0717610500

*First Person on the Scene Manual* (IHCD, 2006)
Key skills

Achievement of key skills is not a requirement of this qualification but it is encouraged. Suggestions of opportunities for the generation of Level 3 key skill evidence are given here. Tutors should check that learners have produced all the evidence required by part B of the key skills specifications when assessing this evidence. Learners may need to develop additional evidence elsewhere to fully meet the requirements of the key skills specifications.

### Communication Level 3

<table>
<thead>
<tr>
<th>When learners are:</th>
<th>They should be able to develop the following key skills evidence:</th>
</tr>
</thead>
</table>
| • demonstrating basic life support | C3.1b  
Make a formal presentation of at least eight minutes using an image or other support material. |
| • researching relevant legislation regarding responding to first-aid incidents in the aviation environment | C3.2  
Read and synthesise information from at least two documents about the same subject.  
Each document must be a minimum of 1000 words long. |
| • describing the principles and priorities in responding to first-aid incidents in the aviation environment. | C3.3  
Write two different types of documents each one giving different information about complex subjects.  
One document must be at least 1000 words long. |

### Information and communication technology Level 3

<table>
<thead>
<tr>
<th>When learners are:</th>
<th>They should be able to develop the following key skills evidence:</th>
</tr>
</thead>
</table>
| • describing how the body responds to injury and illness. | ICT3.3  
Present combined information such as text with image, text with number, image with number. |
Assessment and grading

The purpose of assessment is to ensure that effective learning has taken place. Assignments constructed by centres should be reliable and fit for purpose, and should build on the application of the grading criteria. Centres should use a variety of assessment methods, including case studies, assignments and work-based assessments, along with projects, performance observation and time-constrained assessments. Centres are encouraged to emphasise the practical application of the grading criteria, providing a realistic scenario for learners to adopt, and making maximum use of practical activities and work experience. The creation of assignments that are fit for purpose is vital to learners’ achievement and their importance cannot be over-emphasised.

All of the criteria listed in the grading grid for each unit must be covered by one assignment, or by a series of assignments. It is advisable that criteria are clearly indicated on each assignment to provide a clear focus for learners and to assist with internal verification and standardisation processes. This will also help to ensure that feedback is specific to the criteria. Tasks and activities should enable learners to produce evidence that relates directly to the specified criteria.

When reading the grading grids and designing assignments, centres should note that for learners to achieve a merit/distinction grade they will be required to provide evidence that is qualitative, not quantitative, in its nature. Centres are encouraged to look across the units’ grading grids to identify common topics.

Grading domains

The grading criteria are developed in relation to grading domains which provide for the assessment of the learning outcomes of the unit. There are four BTEC National grading domains which underpin the grading criteria:

- application of knowledge and understanding
- development of practical and technical skills
- personal development for occupational roles
- application of generic and key skills.

The qualitative nature of the merit and distinction grading criteria is based on indicative characteristics of the evidence to fulfil the higher grades. Please refer to Annexe B.

A grading scale of pass, merit and distinction is applied to all units.

In Edexcel BTEC Nationals all units are internally assessed.

All assessment for BTEC Nationals is criterion referenced, based on the achievement of specified learning outcomes. Each unit has specified criteria which are to be used for grading. A summative unit grade can be awarded at pass, merit or distinction:

- to achieve a ‘pass’ a learner must have satisfied all the pass criteria
- to achieve a ‘merit’ a learner must additionally have satisfied all the merit criteria
• to achieve a ‘distinction’ a learner must additionally have satisfied all the
distinction criteria.

Learners who complete the unit but who do not meet all the pass criteria are graded
‘unclassified’.

Quality assurance

Edexcel’s qualification specifications set out the standard to be achieved by each
learner in order to be awarded the qualification. This is covered in the statement of
learning outcomes and grading criteria in each unit. Further guidance on delivery and
assessment is given in the Essential guidance for tutors section in each unit. This
section is designed to provide additional guidance and amplification related to the
unit to support tutors, deliverers and assessors and to provide for a coherence of
understanding and a consistency of delivery and assessment.

Edexcel operates an independent, external quality assurance process which is
designed to ensure that these standards are maintained by all internal verifiers and
external verifiers. It achieves this through the following activities.

Approval

Centres that have not previously offered BTEC qualifications will first need to apply
for, and be granted, centre approval before they can apply for approval to offer the
programme.

Centres wishing to offer a vocational area for the first time will need to apply for
approval to offer the programme.

When a centre applies for approval to offer a BTEC qualification they will be required
to enter into an approvals agreement.

The approvals agreement is a formal commitment by the head or principal of a
centre to meet all the requirements of the specification and any linked codes or
regulations. Sanctions and tariffs may be applied if centres do not comply with the
agreement. Ultimately, this could result in the suspension of certification or
withdrawal of approval.

Centres will be allowed ‘accelerated approval’ for a new programme where the
centre already has approval for a programme that is being replaced by the new
programme.

Risk assessment

Edexcel has an approval process which creates a quality profile of each qualification
programme in each centre and for the centre as a whole. This profile helps to
determine how the programme will be externally verified and will also be used to
initiate other quality control measures by Edexcel.
Internal verification

Centres are required to have processes in place that review each assessor’s decisions. This ensures that they are correctly interpreting and applying the standards set out in the specifications. The system used to do this is a matter for individual centres and Edexcel fully supports the use of the centre’s own quality assurance systems where they ensure robust internal standardisation.

Centres should refer to the BTEC NQF Level 2/3 (including Short Courses at Levels 1-3) Handbook (updated annually). This information can also be found on our website www.edexcel.org.uk then click on ‘Services for Centres’ and then ‘FE Colleges & Schools’.

External verification

Edexcel will sample assessors’ decisions using sector-specialist external verifiers. For BTEC Nationals this process will follow the National Standards Sampling (NSS) protocol.

Learners’ work must be internally assessed. Additionally, at least 50 per cent of submitted work must be internally verified.

Centres should refer to the BTEC NQF Level 2/3 (including Short Courses at Levels 1-3) Handbook (updated annually). This updated information can also be found on our website, go to www.edexcel.org.uk then click on ‘Services for Centres’ and then ‘FE Colleges & Schools’.

Calculation of the qualification grade

Awarding a qualification grade

The qualification grade will be calculated through the aggregation of points achieved through the successful achievement of individual units. The number of points available will be dependent on the unit grade achieved and the size of the unit as determined by the stipulated guided learning hours.

For the calculation of a qualification grade for a BTEC National a learner must:

• complete all designated units
• achieve a minimum points score of
  - 36 points for a National Award
  - 72 points for a National Certificate
  - 108 points for a National Diploma
• achieve a pass (or above) grade for units with a combined total of
  - 300 guided learning hours for a National Award
  - 600 guided learning hours for a National Certificate
  - 900 guided learning hours for a National Diploma.
### Unit points

<table>
<thead>
<tr>
<th>Size of unit (GLH)</th>
<th>Pass grade</th>
<th>Merit grade</th>
<th>Distinction grade</th>
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<tbody>
<tr>
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<tr>
<td>120</td>
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<td>24</td>
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### Grade boundaries and UCAS points (as of 1st January 2007)

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<thead>
<tr>
<th>Grade boundaries BTEC National Award</th>
<th>Overall grade BTEC National Award</th>
<th>UCAS points</th>
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<tbody>
<tr>
<td>36-59 Pass</td>
<td>P</td>
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<tr>
<td>60-83 Merit</td>
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<td>84-108 Distinction</td>
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<table>
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<tr>
<td>96-119 MP</td>
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<td>120-143 MM</td>
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<td>168-216 DD</td>
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<table>
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<td>252-324 DDD</td>
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Programme design and delivery

BTEC National qualifications consist of core units (which are mandatory) and specialist units. Specialist units are designed to provide a specific focus to the qualification. Required combinations of specialist units are set out clearly in relation to each qualification in the defined qualification structures in this document.

In BTEC Nationals each unit is 30, 60, 90 or 120 guided learning hours (GLH). The GLH includes an estimate of time that might be allocated to direct teaching, instruction and assessment, together with other structured learning time such as directed assignments or supported individual study. It excludes learner-initiated private study. Centres are advised to consider this definition when planning the programme of study associated with this specification.

Mode of delivery

Edexcel does not define the mode of study for BTEC Nationals. Centres are free to offer the qualifications using any mode of delivery that meets their learner’s needs. This may be through traditional classroom teaching, open learning, distance learning or a combination of the three. Whichever mode of delivery used, centres must ensure that learners have appropriate access to the resources identified in the specification and to the subject specialists delivering the units. This is particularly important for learners studying for the qualification through open or distance learning.

Learners studying for the qualification on a part-time basis bring with them a wealth of experience that should be utilised to maximum effect by tutors and assessors. Assessment evidence drawn from learners’ work environments should be encouraged. Those planning the programme should aim to enhance the vocational nature of the qualification by:

- liaising with employers to ensure a course relevant to learners’ specific needs
- accessing and using non-confidential data and documents from learners’ workplaces
- including sponsoring employers in the delivery of the programme and, where appropriate, in the assessment
- linking with company-based/workplace training programmes
- making full use of the variety of experience of work and life that learners bring to the programme.

Resources

BTEC Nationals are designed to prepare learners for employment in specific occupational sectors. Physical resources need to support the delivery of the programme and the proper assessment of the learning outcomes, and should therefore normally be of industry standard. Staff delivering programmes and conducting the assessments should be fully familiar with current practice and standards in the sector concerned. Centres will need to meet any specialist resource requirements when they seek approval from Edexcel.
Where specific resources are required these have been indicated in individual units under the Essential resources section.

**Delivery approach**

It is important that centres develop an approach to teaching and learning that supports the specialist vocational nature of BTEC National qualifications. Specifications give a balance of practical skill development and knowledge requirements, some of which can be theoretical in nature. Tutors and assessors need to ensure that appropriate links are made between theory and practical application and that the knowledge base is applied to the sector. This requires the development of relevant and up-to-date teaching materials that allow learners to apply their learning to actual events and activity within the sector. Maximum use should be made of the learner’s experience.

**Accreditation of Prior Learning (APL)**

Edexcel encourages centres to recognise learners’ previous achievements and experiences through APL. Learners may have evidence that has been generated during previous study or in their previous or current employment or whilst undertaking voluntary work that relates to one or more of the units in the qualification. Assessors should map this evidence against the grading criteria in the specification and make this evidence available to the external verifier. As with all evidence, assessors should be satisfied about the authenticity and currency of the material when considering whether or not the learning outcomes of the unit have been met.

Full guidance on Edexcel’s policy on APL is provided on our website, go to www.edexcel.org.uk then click on ‘About Us’ and then ‘Policies for Centres’.

**Meeting local needs**

Centres should note that the qualifications set out in these specifications have been developed in consultation with centres and employers, particularly the Sector Skills Councils or the Standards Setting Bodies for the relevant sector. The units are designed to meet the skill needs of the sector and the specialist units allow coverage of the full range of employment. Centres should make maximum use of the choice available to them within the specialist units in these specifications to meet the needs of their learners, and the local skills and training needs identified by organisations such as the Regional Development Agency and the local Learning and Skills Council.

In certain circumstances, units in this specification might not allow centres to meet a local need. In this situation, centres can seek approval from Edexcel to make use of units from other standard NQF BTEC National specifications. Centres will need to justify the need for importing units from other specifications and Edexcel will ensure that the vocational focus of the qualification has not been diluted. Units that have externally set assignments cannot be imported into other qualifications.
There may be exceptional circumstances where even this flexibility does not meet a particular local need. In this case, centres can seek permission from Edexcel to develop a unit with us to meet this need. There are very few cases where this will be allowed. Centres will need strong evidence of the local need and the reasons why our standard units are inappropriate. Edexcel will need to submit these units for accreditation by QCA.

**Limitations on variations from standard specifications**

The flexibility to import standard units from other BTEC Nationals and/or develop unique units is limited to a total of:
- \( \frac{2}{9} \) (for example four 60 GLH units) in a BTEC National Diploma qualification
- \( \frac{1}{6} \) (for example two 60 GLH units) in a BTEC National Certificate qualification
- \( \frac{1}{6} \) (for example one 60 GLH unit) in a BTEC National Award qualification.

The use of these units cannot be at the expense of the core units in any qualification.

**Access and recruitment**

Edexcel’s policy regarding access to its qualifications is that:
- they should be available to everyone who is capable of reaching the required standards
- they should be free from any barriers that restrict access and progression
- there should be equal opportunities for all wishing to access the qualifications.

Centres are required to recruit learners to BTEC qualifications with integrity. This will include ensuring that applicants have appropriate information and advice about the qualifications and that the qualification will meet their needs. Centres should take appropriate steps to assess each applicant’s potential and make a professional judgement about their ability to successfully complete the programme of study and achieve the qualification. This assessment will need to take account of the support available to the learner within the centre during their programme of study and any specific support that might be necessary to allow the learner to access the assessment for the qualification. Centres should also show regard for Edexcel’s policy on learners with particular requirements.

Centres will need to review the profile of qualifications and/or experience held by applicants, considering whether this profile shows an ability to progress to a Level 3 qualification. For learners who have recently been in education, the profile is likely to include one of the following:
- a BTEC First qualification in Travel and Tourism or a related vocational area
- an Intermediate GNVQ in an appropriate vocational area
- a GCSE equivalent to four passes at grade C
- other related Level 2 qualifications
- related work experience.
More mature learners may present a more varied profile of achievement that is likely to include experience of paid and/or unpaid employment.

**Restrictions on learner entry**

Most BTEC National qualifications are accredited on the NQF for learners aged 16 years and over. Learners aged 15 and under cannot be registered for a BTEC National qualification.

In particular sectors the restrictions on learner entry might also relate to any physical or legal barriers, for example people working in health, care or education are likely to be subject to police checks.

Edexcel Level 3 BTEC Nationals are listed on the DfES funding lists Section 96 and Section 97.

**Access arrangements and special considerations**

Edexcel’s policy on access arrangements and special considerations for BTEC and Edexcel NVQ qualifications aims to enhance access to the qualifications for learners with disabilities and other difficulties (as defined by the 1995 Disability Discrimination Act and the amendments to the Act) without compromising the assessment of skills, knowledge, understanding or competence.

Further details are given in the policy ‘Access Arrangements and Special Considerations for BTEC and Edexcel NVQ Qualifications’, which is on the Edexcel website (www.edexcel.org.uk). This policy replaces the previous Edexcel policy (Assessment of Vocationally Related Qualification: Regulations and Guidance Relating to Learners with Special Requirements, 2002) concerning learners with particular requirements.
The Edexcel BTEC Qualification Framework for the travel, tourism and transport sector

Progression opportunities within the framework are available vertically, diagonally and horizontally.

<table>
<thead>
<tr>
<th>NQF Level</th>
<th>General Qualifications</th>
<th>BTEC full VRQ courses</th>
<th>BTEC Short Courses</th>
<th>NVQ/occupational</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>BTEC Higher National Certificate/Diploma in Travel and Tourism Management</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Advanced GCE in Travel and Tourism (Double Award)</td>
<td>BTEC National Award/Certificate/Diploma in Aviation Operations</td>
<td>BTEC Diplomas in Travel Operations</td>
<td>NVQ for Managing in Road Passenger Transport</td>
</tr>
<tr>
<td>3</td>
<td>Advanced GCE in Travel and Tourism (Double Award)</td>
<td>BTEC National Award/Certificate/Diploma in Travel and Tourism</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>GCSE in Leisure and Tourism (Double Award)</td>
<td>BTEC First Certificate/Diploma in Travel and Tourism</td>
<td>BTEC Diploma in Overseas Resort Operations</td>
<td>NVQ in PCV Driving</td>
</tr>
<tr>
<td>1</td>
<td>BTEC Introductory Certificate/Diploma in Hospitality, Travel and Tourism</td>
<td></td>
<td>BTEC Diploma in Travel Operations</td>
<td></td>
</tr>
</tbody>
</table>

Further information

For further information please call Customer Services on 0844 576 0026 (calls may be recorded for training purposes) or visit our website at www.edexcel.org.uk.

Useful publications

Further copies of this document and related publications can be obtained from:

Edexcel Publications
Adamsway
Mansfield
Nottinghamshire NG18 4FN
Telephone: 01623 467 467
Fax: 01623 450 481
Email: publications@linneydirect.com

Related information and publications include:

- Accreditation of Prior Learning available on our website: www.edexcel.org.uk
- Guidance for Centres Offering Edexcel/BTEC NQF Accredited Programmes — (Edexcel, distributed to centres annually)
- key skills publications — specifications, tutor support materials and question papers
- the current Edexcel publications catalogue and update catalogue.

Edexcel publications concerning the Quality Assurance System and the internal and external verification of vocationally related programmes can be found on the Edexcel website and in the Edexcel publications catalogue.

NB: Most of our publications are priced. There is also a charge for postage and packing. Please check the cost when you order.
How to obtain National Occupational Standards

Aviation
GoSkills
Concorde House
Trinity Park
Solihull
West Midlands B37 7UQ
Telephone: 0121 635 5520
Fax: 0121 635 5521
Website: www.goskills.org
Email: info@goskills.org

Marketing
MSSSB
The Chartered Institute of Marketing
Moor Hall
Cookham
Berkshire SL6 9QH
Telephone: 01628 427106
Fax: 01628 427399
Website: www.msssb.org
Email: chahid@msssb.org

Personnel
ENTO
Kimberley House
47 Vaughan Way
Leicester LE1 4SG
Telephone: 0116 251 7979
Fax: 0116 251 1464
Website: www.ento.co.uk
Email: info@ento.co.uk
Professional development and training

Edexcel supports UK and international customers with training related to BTEC qualifications. This support is available through a choice of training options offered in our published training directory or through customised training at your centre.

The support we offer focuses on a range of issues including:

- planning for the delivery of a new programme
- planning for assessment and grading
- developing effective assignments
- building your team and teamwork skills
- developing student-centred learning and teaching approaches
- building key skills into your programme
- building in effective and efficient quality assurance systems.

The national programme of training we offer can be viewed on our website (www.edexcel.org.uk/sfc/training). You can request customised training through the website or by contacting one of our advisers in the Professional Development and Training team via Customer Services to discuss your training needs.

Our customer service numbers are:

- BTEC and NVQ 0844 576 0026
- GCSE 0844 576 0027
- GCE 0844 576 0025
- The Diploma 0844 576 0028
- DIDA and other qualifications 0844 576 0031

Calls may be recorded for training purposes.

The training we provide:

- is active — ideas are developed and applied
- is designed to be supportive and thought provoking
- builds on best practice.
Annexe A

QCA codes

The QCA National Qualifications Framework (NQF) code is known as a Qualification Accreditation Number (QAN). This is the code that features in the DfES Funding Schedules, Section 96 and 97 and is to be used for all qualification funding purposes. Each unit within a qualification will also have a QCA NQF unit code.

The QCA qualification and unit codes will appear on the learner’s final certification documentation.

The QANs for the qualifications in this publication are:

500/1209/5 Edexcel Level 3 BTEC National Award in Aviation Operations
500/1211/3 Edexcel Level 3 BTEC National Certificate in Aviation Operations
500/1210/1 Edexcel Level 3 BTEC National Diploma in Aviation Operations

These qualification titles will appear on the learners’ certificates. Learners need to be made aware of this when they are recruited by the centre and registered with Edexcel. Providing this happens, centres are able to describe the programme of study leading to the award of the qualification in different ways to suit the medium and the target audience.
## Annexe B

**Grading domains: Level 3 BTEC generic grading domains**

<table>
<thead>
<tr>
<th>Grading domain 1</th>
<th>Indicative characteristics — Merit</th>
<th>Indicative characteristics — Distinction</th>
</tr>
</thead>
</table>
| Application of knowledge and understanding (Learning outcome stem understand or know) | • Shows depth of knowledge and development of understanding in familiar and unfamiliar situations (eg explain why, makes judgements based on analysis).  
• Applies and/or selects concepts showing comprehension of often complex theories.  
• Applies knowledge in often familiar and unfamiliar contexts.  
• Applies knowledge to non-routine contexts (eg assessor selection).  
• Makes reasoned analytical judgements.  
• Shows relationships between p criteria. | • Synthesises knowledge and understanding across p/m criteria.  
• Evaluates complex concepts/ideas/actions and makes reasoned and confident judgements.  
• Uses analysis, research and evaluation to make recommendations and influence proposals.  
• Analyses implications of application of knowledge/understanding.  
• Accesses and evaluates knowledge and understanding to advance complex activities/contexts.  
• Shows relationships with p/m criteria.  
• Responds positively to evaluation. |
<table>
<thead>
<tr>
<th>Grading domain 2</th>
<th>Indicative characteristics — Merit</th>
<th>Indicative characteristics — Distinction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Development of practical and technical skills (Learning outcome stem be able to)</td>
<td>• Deploys appropriate advanced techniques/processes/skills.</td>
<td>• Demonstrates creativity/originality/own ideas.</td>
</tr>
<tr>
<td></td>
<td>• Applies technical skill to advance non-routine activities.</td>
<td>• Applies skill(s) to achieve higher order outcome.</td>
</tr>
<tr>
<td></td>
<td>• Advances practical activities within resource constraints.</td>
<td>• Selects and uses successfully from a range of advanced techniques/processes/skills.</td>
</tr>
<tr>
<td></td>
<td>• Produces varied solutions (including non-routine).</td>
<td>• Reflects on skill acquisition and application.</td>
</tr>
<tr>
<td></td>
<td>• Modifies techniques/processes to situations.</td>
<td>• Justifies application of skills/methods.</td>
</tr>
<tr>
<td></td>
<td>• Shows relationship between p criteria.</td>
<td>• Makes judgements about risks and limitations of techniques/processes.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Innovates or generates new techniques/processes for new situations.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Shows relationship with p and m criteria.</td>
</tr>
<tr>
<td>Grading domain 3</td>
<td>Indicative characteristics — Merit</td>
<td>Indicative characteristics — Distinction</td>
</tr>
<tr>
<td>------------------</td>
<td>------------------------------------</td>
<td>-----------------------------------------</td>
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</tbody>
</table>
| Personal development for occupational roles (Any learning outcome stem) | • Takes responsibility in planning and undertaking activities.  
• Reviews own development needs.  
• Finds and uses relevant information sources.  
• Acts within a given work-related context showing understanding of responsibilities.  
• Identifies responsibilities of employers to the community and the environment.  
• Applies qualities related to the vocational sector.  
• Internalises skills/attributes (creating confidence). | • Manages self to achieve outcomes successfully.  
• Plans for own learning and development through the activities.  
• Analyses and manipulates information to draw conclusions.  
• Applies initiative appropriately.  
• Assesses how different work-related contexts or constraints would change performance.  
• Reacts positively to changing work-related contexts  
• Operates ethically in work-related environments.  
• Takes decisions related to work contexts.  
• Applies divergent and lateral thinking in work-related contexts.  
• Understands interdependence. |
<table>
<thead>
<tr>
<th>Grading domain 4</th>
<th>Indicative characteristics — Merit</th>
<th>Indicative characteristics — Distinction</th>
</tr>
</thead>
</table>
| Application of generic skills (Any learning outcome stem) | • Communicates effectively using appropriate behavioural and language registers.  
• Communicates with clarity and influence.  
• Makes judgements in contexts with explanations.  
• Explains how to contribute within a team.  
• Demonstrates positive contribution to team(s).  
• Makes adjustments to meet the needs/expectations of others (negotiation skills).  
• Selects and justifies solutions for specified problems. | • Presents self and communicates information to meet the needs of a variety of audience.  
• Identifies strategies for communication.  
• Shows innovative approaches to dealing with individuals and groups.  
• Takes decisions in contexts with justifications.  
• Produces outputs subject to time/resource constraints.  
• Reflects on own contribution to working within a team.  
• Generates new or alternative solutions to specified problems.  
• Explores entrepreneurial attributes. |
Annexe C

Key skills

All BTEC National qualifications include mapping and/or signposting of key skills. These are transferable skills, which play an essential role in developing personal effectiveness for adult and working life and in the application of specific vocational skills.

In each unit the opportunities for the generation of evidence for key skills are signposted. These are indicative links only. Tutors will need to become familiar with key skills specifications and their evidence requirements and they are advised not to rely on the signposting in the units when presenting key skills evidence for moderation. Centres should refer to the QCA website (www.qca.org.uk) for the latest key skills standards.

Key skills provide a foundation for continual learning. They enable and empower individuals who inevitably face a series of choices in work, education and training throughout their lives. Current and future initiatives such as Learndirect, lifelong learning and widening participation all require a more flexible population in the workplace and key skills play a role in setting the framework.

Learners need the chance to show current and future employers that they can:

- communicate effectively, in a variety of situations, using a wide range of techniques
- work well with others — individuals or teams — so that work can be properly planned and targets met
- manage their own development, so that they are always ready to take on the challenges of change and diversification
- use number, not just within routine tasks and functions but to help them be more effective and efficient in all they do
- use ICT in a range of applications to support all aspects of their role
- solve problems in a variety of circumstances.
### Key skills mapping — summary of opportunities suggested in each unit

<table>
<thead>
<tr>
<th>Key skills</th>
<th>Unit 1</th>
<th>Unit 2</th>
<th>Unit 3</th>
<th>Unit 4</th>
<th>Unit 5</th>
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Annexe D

National Occupational Standards


**KEY**

✓ indicates that the Edexcel Level 3 covers all of the underpinning knowledge of the NVQ unit

# indicates partial coverage of the NVQ unit

a blank space indicates no coverage of the underpinning knowledge

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<td>Unit 51 — Develop own and others’ customer service skills</td>
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<td>Unit 57 — Develop productive working relationships with colleagues</td>
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<td>Unit 58 — Recruit, select and keep colleagues</td>
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<td>Unit 60 — Allocate and monitor the progress and quality of work in your area of responsibility</td>
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<td>Unit 63 — Build your organisation’ understanding of its market and customers</td>
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Annexe E

BTEC National in Airline and Airport Operations old specification (end date 31 August 2007)/BTEC National in Aviation Operations new specification (start date 01 September 2007) — unit mapping overview

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- F — Full mapping (Topics in old unit match new unit exactly or almost exactly)
- X — Full mapping + new (All the topics from the old unit appear in the new unit, but new unit also contains new topic(s))
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### BTEC National in Airline and Airport Operations old specification (end date 31 August 2007)/BTEC National in Aviation Operations new specification (start date 01 September 2007) — unit mapping in depth

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<tr>
<td><strong>Unit 12</strong></td>
<td><strong>Unit 16</strong></td>
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<tr>
<td>Preparation for Working in the Aviation Industry</td>
<td>Preparation for Work Based Experience</td>
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<tr>
<td><strong>Unit 13</strong></td>
<td><strong>Unit 17</strong></td>
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<tr>
<td>Airline and Airport Economics</td>
<td>Airline Economics</td>
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<td><strong>Unit 22</strong></td>
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<td></td>
<td>Airport Economics</td>
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</tbody>
</table>

**Mapping/comments (new topics in italics)**

- **Unit 8** Handling Air Passengers: Topics that remain the same: passport and visa information, airport facilities and staff, boarding and embarkation, on-board facilities, disembarkation and arrival. Topics that have been removed from the new qualification: arranging a journey, making a booking. *New topics: arriving at and departing from airports*.

- **Unit 9** Air Cargo Operations: Topics that remain the same: requirements and responsibilities of shipper, freight forwarders, export and import procedures.

- **Unit 10** Airport Ramp Handling: Topics that remain the same: aircraft turnround, air traffic control procedures, aircraft loading, regulation and safety issues.

- **Unit 11** Aircraft and Airfield Performance: Topics that remain the same: principles of aircraft performance, legal requirements, take off and landing masses, obstacle clearance.

- **Unit 12** Preparation for Working in the Aviation Industry: Topics that remain the same: personal development plan, preparation for employment. Topics that have been removed from the new qualification: work-based placements. *New topics: employment opportunities*.

- **Unit 13** Airline and Airport Economics: Topics that remain the same: characteristics of demand and supply, costs, pricing strategy.
<table>
<thead>
<tr>
<th>New units</th>
<th>Old units</th>
<th>Mapping/comments (new topics in italics)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Unit 14</strong></td>
<td><strong>Unit 21</strong></td>
<td>Topics that remain the same: organisation structure, recruitment and selection, standards and performance</td>
</tr>
<tr>
<td>Human Resources in the</td>
<td>Human Resources in the</td>
<td>Topics that have been moved and are covered in different areas of the new specification: management styles and skills (Unit 18)</td>
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<tr>
<td>Aviation Industry</td>
<td>Aviation Industry</td>
<td><em>New topics: roles and responsibilities of human resources</em></td>
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<tr>
<td><strong>Unit 15</strong></td>
<td><strong>Unit 23</strong></td>
<td>Topics that remain the same: aircraft-related incidents, personal aspects, recovery to normal airport operations, non-standard operations</td>
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<tr>
<td>Airport Emergency Operations</td>
<td>Emergency Operations</td>
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<tr>
<td><strong>Unit 16</strong></td>
<td><strong>Unit 24</strong></td>
<td>Topics that remain the same: airport planning and development, pollution and its measurement, control and reduction, impact on local community</td>
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<tr>
<td>Environmental Impacts of</td>
<td>Airports and the Environment</td>
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<tr>
<td>Aviation</td>
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<tr>
<td><strong>Unit 17</strong></td>
<td><strong>Unit 25</strong></td>
<td>Topics that remain the same: terminal environment, airfield operations, ramp operations, planning</td>
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<tr>
<td>Airport Operations</td>
<td>Airport Operations</td>
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<tr>
<td><strong>Unit 18</strong></td>
<td>-</td>
<td><em>New topics: styles of leadership, communicating effectively, skills and qualities, effective team leader</em></td>
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<tr>
<td>Team Leadership in the</td>
<td>n/a</td>
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<tr>
<td>Aviation Industry</td>
<td></td>
<td><em>New topics: types and causes, early signs, communication, measures</em></td>
</tr>
<tr>
<td><strong>Unit 19</strong></td>
<td>-</td>
<td><em>New topics: principles of first aid, human body, basic and advanced life support</em></td>
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<tr>
<td>Conflict Management for</td>
<td>n/a</td>
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<td>Aviation</td>
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<tr>
<td><strong>Unit 20</strong></td>
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<tr>
<td>First Aid and Health for</td>
<td>n/a</td>
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<tr>
<td>Aviation</td>
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Annexe F

Wider curriculum mapping

Study of the Edexcel Level 3 BTEC Nationals in Aviation Operations gives learners opportunities to develop an understanding of spiritual, moral, ethical, social and cultural issues as well as an awareness of environmental issues, European developments, health and safety considerations and equal opportunities issues.

The Edexcel Level 3 BTEC Nationals in Aviation Operations make a positive contribution to wider curricular areas as appropriate.

Spiritual, moral, ethical, social and cultural issues

The specification contributes to an understanding of:

- spiritual issues — understanding how the needs of different types of customers can be met can lead to discussions on, and an awareness of, spiritual issues
- moral and ethical issues — dealing with customers should always engage the learner in a consideration of moral and ethical issues, throughout many aspects of the specification learners will develop their knowledge and understanding to allow them to act in an ethically and morally correct manner
- social and cultural issues — dealing with a wide variety of people in customer service, team leadership and conflict management situations will enable to develop their personal skills in this area.

Environmental issues

Learners are led to appreciate the importance of environmental issues through the experience of the aviation sector, particularly in Unit 16: Environmental Impacts of Aviation.

European developments

Much of the content of the Edexcel Level 3 BTEC Nationals in Aviation Operations applies throughout Europe, even though the delivery is in a UK context. The European dimensions of aviation are specifically addressed in Unit 1: The Aviation Industry, Unit 2: Health, Safety and Security in the Aviation Industry, Unit 9: Air Cargo Operations, Unit 10: Airport Ramp Handling and Unit 14: Human Resources in the Aviation Industry.
Health and safety considerations

The Edexcel Level 3 BTEC Nationals in Aviation Operations are practically based and health and safety issues are encountered throughout the units. Learners will develop awareness of the safety of others as well as themselves in all practical activities. Learners will also explore health and safety issues across the aviation sector, particularly in Unit 2: Health, Safety and Security in the Aviation Industry.

Equal opportunities issues

Equal opportunities issues are implicit throughout the Edexcel Level 3 BTEC Nationals in Aviation Operations.
### Wider curriculum mapping

|                        | Unit 1 | Unit 2 | Unit 3 | Unit 4 | Unit 5 | Unit 6 | Unit 7 | Unit 8 | Unit 9 | Unit 10 | Unit 11 | Unit 12 | Unit 13 | Unit 14 | Unit 15 | Unit 16 | Unit 17 | Unit 18 | Unit 19 | Unit 20 |
|------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Spiritual issues       |        | ✓      |        | ✓      |        | ✓      |        | ✓      |        | ✓      |        | ✓      |        | ✓      |        |        |        |        |        |        |
| Moral and ethical      | ✓      | ✓      |        |        | ✓      |        | ✓      |        | ✓      |        | ✓      |        | ✓      |        | ✓      |        |        |        |        |        |
| Social and cultural    |        |        | ✓      |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| Environmental issues   | ✓      |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| European developments  | ✓      | ✓      |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| Health and safety      | ✓      | ✓      |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| considerations         |        |        | ✓      |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| Equal opportunities    | ✓      | ✓      | ✓      | ✓      | ✓      | ✓      | ✓      | ✓      | ✓      | ✓      | ✓      | ✓      | ✓      | ✓      | ✓      | ✓      | ✓      | ✓      | ✓      | ✓      |
| issues                 |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |