

# Unit 1: The UK Aviation Industry

**Unit code:** T/504/2278

**QCF Level 3:** BTEC Nationals

**Credit value:** 10

**Guided learning hours:** 60

## ● Aim and purpose

The aim of this unit is to give learners knowledge and understanding of the scale of UK aviation and the role of organisations within the industry.

## ● Unit introduction

This unit is an invaluable and interesting starting point in a learner's study of the aviation industry, as it enables them to investigate the industry holistically.

Learners start by examining the scale of the industry, which will put the industry into context and emphasise its relative importance to the UK.

The diverse nature of airlines is explored next and how their different services serve different markets. Airports are investigated by examining their location, their facilities and their ownership before looking in detail at their different characteristics.

The aviation industry is governed and supported by a strict regulatory regime covering safety and security issues, and these regulatory organisations are backed-up by a number of trade associations that co-ordinate activities in these and other areas to serve the best interests of the different industry sectors.

The industry would not function without a vast array of ancillary organisations that supply vital products and services in a number of specialist areas from aircraft manufacturing for airlines to tax-free shopping for passengers.

Nine out of every ten flights in the UK are general aviation (GA) flights. However, GA is a sector of the industry that most learners give very little thought to. An exploration of the organisations that make up this hugely important sector concludes the unit.

## ● Learning outcomes

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

- 1 Know the scale of the UK aviation industry and how it contributes to the UK economy
- 2 Understand the operating characteristics of commercial airlines
- 3 Understand the different types of UK airport, their ownership and characteristics
- 4 Understand the contribution of general aviation operations to the UK aviation industry
- 5 Understand how regulatory bodies, trade associations and ancillary organisations support the aviation industry.

# **Unit content**

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## **1 Know the scale of the UK aviation industry and how it contributes to the UK economy**

Scale of the UK aviation industry:

- million passengers per annum (mppa) (UK total, by UK airport, by UK airline, domestic and international total, international destinations to and from the UK by country – leading five by CAA statistics)
- non-passenger indicators (number of air transport movements (ATMs), cargo tonnes uplifted)
- major changes and trends over the last ten years, e.g. growth of regional airports
- financial scale, e.g. major airline operating revenues, major airline operating expenses, major airline operating profit or loss, changes and trends, currency exchange and impact on airlines as fuel purchased in US dollars, fleet grounding and impact on airlines
- employment figures, e.g. airports, airlines
- contribution to UK gross domestic product (GDP), UK airline passenger duties are among the highest in the world

## **2 Understand the operating characteristics of commercial airlines**

Types of commercial airlines:

- full service scheduled
- low-cost scheduled
- charter
- cargo, e.g. scheduled, charter, integrated

Operating characteristics:

- aircraft types, e.g. manufacturers, characteristics, crew and ground handling requirements
- route networks, e.g. long/short haul, hub and spoke, point to point, international/domestic
- fares and conditions of travel, e.g. flexibility, seat selection, baggage allowances
- class options and service levels
- timetables
- distribution, e.g. bookings

## **3 Understand the different types of UK airport, their ownership and characteristics**

UK airports:

- geographical location
- major, e.g. London Heathrow
- regional, e.g. Newcastle
- local, e.g. Blackpool
- ownership (public, private, public/private partnership, group)

UK airport characteristics:

- route network
- number and type of airlines
- number of passengers
- cargo tonnes
- passenger facilities and services, e.g. car parks, shops, restaurants, executive lounges, hotels
- operational facilities and services (runways, passenger terminals, cargo terminals, handling agents)
- scale and location of general aviation operations

#### **4 Understand the contribution of general aviation operations to the UK aviation industry**

Types of general aviation organisations:

- aircraft operator, e.g. flight school, club, executive transport, air taxi, oil industry support, emergency service
- airfield operator, e.g. private strip, GA terminal at regional airport
- management and control, e.g. Air Traffic Control, Border Control, Airfield management

Aircraft types used by general aviation organisations:

- manufacturers, e.g. Cessna, Piper, Bell, Boeing, Gulfstream
- characteristics, e.g. fixed wing, rotary, passenger capacity, cargo capacity range, take-off/landing performance
- requirements, e.g. crew number, qualifications, ground handling

General aviation operations:

- ownership types, e.g. private (business, pleasure), club, corporate, fractional
- pilot training, e.g. school, private, commercial
- recreational, e.g. flying club, gliding, parachute, aerobatics, microlight
- commercial operation, e.g. business, air taxi, charter, survey, agricultural,
- emergency services, e.g. police, ambulance
- oil industry support, e.g. fixed wing, rotary
- ground support, e.g. airfield management, aircraft management, GA terminals at major airports
- relationships with regulatory and statutory bodies, e.g. Air Traffic Control, UK Border Force, CAA
- links with other aviation organisations, e.g. airfield operators, commercial airlines

## **5 Understand how regulatory bodies, trade associations and ancillary organisations support the aviation industry**

Role of regulatory bodies, in relation to aviation:

- role of regulatory bodies (to establish the rules and regulations that govern the industry, to promulgate rules and regulations and to ensure compliance with rules and regulations)
- International Civil Aviation Organization (ICAO)
- Civil Aviation Authority (CAA)
- UK Border Force
- National Air Traffic Service (NATS)
- police
- Department for Transport – security (TRANSEC)

Role of trade associations:

- role of trade associations (to promote and support the interests of industry)
- International Air Transport Association (IATA)
- Airports Council International (ACI)
- British Air Transport Association (BATA)
- British Business and General Aviation Association (BBGA)

Role of ancillary organisations in relation to supporting the aviation industry:

- role of ancillary organisations (to provide goods and services to the aviation industry)
- aircraft manufacturers
- engine manufacturers
- airline engineering and maintenance companies
- in-flight catering companies
- fuel suppliers
- cleaning companies
- handling agents
- retail operations, e.g. shops and restaurants in airport, currency exchange, airport lounges
- onward travel, e.g. car rental, taxi, public transport
- car parking operators (on site, off site)
- tour operators, travel agents
- freight forwarders

## **Assessment and grading criteria**

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

<b>Assessment and grading criteria</b>		
<b>To achieve a pass grade the evidence must show that the learner is able to:</b>	<b>To achieve a merit grade the evidence must show that, in addition to the pass criteria, the learner is able to:</b>	<b>To achieve a distinction grade the evidence must show that, in addition to the pass and merit criteria, the learner is able to:</b>
<b>P1</b> Describe the scale of the UK aviation industry, including passenger, cargo, financial and employment data [IE]	<b>M1</b> Explain major aviation industry changes and trends in relation to scale and contribution to UK economy	<b>D1</b> Discuss the scale of the industry commenting on trends, operating characteristics and the organisations within it
<b>P2</b> Identify major UK aviation industry changes and trends		
<b>P3</b> Describe different types of commercial airlines	<b>M2</b> Discuss why an airline might base its operation from a particular airport	
<b>P4</b> Compare the operating characteristics of different commercial airlines		
<b>P5</b> Describe different types of UK airports and their ownership		
<b>P6</b> Compare the operating characteristics of different types of airports		
<b>P7</b> Explain how general aviation organisations operate	<b>M3</b> Analyse the role of three different types of general aviation organisations, highlighting their links with other aviation sectors	
<b>P8</b> Analyse the role of regulatory bodies	<b>M4</b> Evaluate the roles of regulatory bodies, trade associations and ancillary organisations in the aviation industry	
<b>P9</b> Analyse the role of trade associations		
<b>P10</b> Analyse the role of ancillary organisations		

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

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

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## **Delivery**

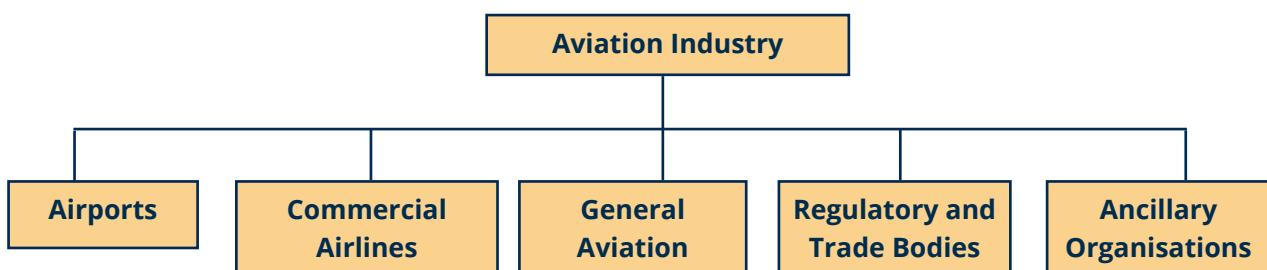
This unit explores the organisations that make up the aviation industry and the scale of their operations. The unit could be delivered as a stand-alone unit or as an introduction to the industry before other, more specialist, units are delivered.

Learning outcome 1 deals with the scale of the aviation industry. To do justice to this outcome it is important that learners are ‘taught’ how to research the information needed and use ‘IT skills’ to produce the graphs and tables to display this information. Learners may need to be given support to ensure they develop the research and IT skills needed to work at this level. Information on the scale of the industry is available on the CAA website. Once the information has been obtained it can be displayed graphically over a variety of different media. For example, displaying a bar chart indicating on a yearly basis ten years in air transport movements (ATMs) will enable learners to clearly identify the impact of economic recession. Information on the impact of aviation on the UK economy is available on a number of websites, for example, the Airport Operators Association (AOA).

If learners are new to the study of the aviation industry it might be beneficial to start by examining learning outcomes 2 and 3. Most learners will have travelled by air or visited an airport and an ideal starting point would be to ask learners to share their experiences. These experiences can be used as the building blocks for a more detailed study of the first three learning outcomes. At this point, it is worth spending time stressing the importance of areas of the industry that learners will probably be less familiar with, e.g. scheduled airlines, business passengers, cargo operations, airport ownership. An ideal way of supporting this learning is to arrange a visit to an airport where facilities and operations can be viewed first hand, although it is accepted that a tighter security regime means that access airside is not always possible and a visit might need to be supplemented by viewing a DVD or internet videos that explore the airside areas of an airport, for example the Institution of Occupational Safety and Health (IOSH), the Airport Airside Induction video.

Learning outcomes 4 and 5 will require learners to research organisations that they will probably be unfamiliar with and it is important that they are given guidance on the relative importance of the organisations mentioned. As part of the United Nations and the international regulator of the air, ICAO is the most important, but all the regulatory bodies mentioned play an integral part in either the safety or economic prosperity of the industry. Learners would benefit from developing a diagram indicating the flow of information and the responsibilities of the various regulatory bodies.

Exploring trade associations, general aviation and ancillary organisations will complete the study of the organisations involved in the aviation industry, and understanding how these organisations fit together will help learners understand their function. A simple diagram, such as the one below should aid learning and understanding.



It is easy to spend a considerable amount of time on commercial airlines and airports and brush over the other sectors, but they should all be treated with equal importance. General aviation (GA) accounts for nine out of every ten flights in the UK and its importance and role should not be overlooked. Learners would benefit from a visit to a GA terminal or visits to local flying clubs, police and air ambulance units or private strips will provide invaluable input and the opportunity to view GA in all its many forms. The CAA and British Business and General Aviation Association (BBGA) websites provide useful reference sites for learners to find the information they need. GA frequently operates very differently from main-stream commercial aviation. Because of their specialisms, business models vary depending on the markets they serve. Investigating the types of aircraft and airfield used together with licensing and handling requirements of at least two different operators would provide an insight into part of this significant but largely unknown sector. Delivery should explore links that exist between GA organisations, regulators, other statutory bodies and other aviation organisations – some of these relationships are similar to those found with main-stream airlines (e.g. DfT, CAA, ATC) whilst others are unique to GA (e.g. types of self-regulation, reduced licence requirements, non-regulated airfields). Occasionally, GA organisations support commercial operations by providing crew transport or delivery of urgent spare parts. A visiting speaker from a flight school or GA airfield would be able to detail the links very clearly.

There are very few textbooks that deal with the content of this unit and those that are available are usually aimed at graduate level. If textbooks are used, tutors may need to distil the information to enable learners to fully understand the issues. In contrast, there is a myriad of websites containing the information learners will need. Airports, airlines, trade associations, regulatory bodies and ancillary organisations all have information that will be invaluable to learners. Tutors may wish to point out some obvious sites, along with allowing ample time for learners to complete their research.

The development of communication skills are critical in achieving this unit. Learners will be expected to produce a range of written materials and they should be presented to appropriate standard for the industry. All learners should be prepared and encouraged to achieve the higher grades. Teaching should, therefore, not just focus on a description of research undertaken. Learners should be encouraged to interpret the information they have researched and consider how this may have affected the organisation or the industry. They should be asked challenging and stimulating questions about the data obtained through research.

## Outline learning plan

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

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

<b>Topic and suggested assignments/activities and/assessment</b>
Introduction and overview of the unit and its five learning outcomes.
A review of the unit assessment methods, along with timescales and hand-out and hand-in dates.
Investigation into the scale of the industry, e.g. mppa, passenger growth levels, cargo tonnes uplifted, employment.
Practical workshop on researching the CAA website and gaining access to airport and airline statistics.
Guest speaker on airport planning and statistics to speak about how passenger statistics are collated and used.
Practical workshop on producing graphs and tables to display airport and airline statistics identifying trends.
Preparing presentation skills.
<b>Preparation for assignment</b>
<b>Assignment 1: The importance of aviation to the UK (P1, P2, M1)</b>
<b>Feedback on assignment</b>
Investigation into airline types.
Learner research on scheduled, low-cost scheduled, charter and cargo airlines and their operating characteristics.
Class discussion on the characteristics of commercial airlines.
Assignment workshop to research P3 and P4.
<b>Preparation for assignment</b>
<b>Assignment 2: UK airlines (P3, P4)</b>
<b>Feedback on assignment</b>
Investigation into airport location, facilities and ownership.
Class discussion on the different types of airports and their characteristics.
Visit to a nearby airport to view facilities.
Investigation into why an airline may base its operation from a particular airport.
Assignment workshop to research P5, P6, M2.
<b>Preparation for assignment</b>
<b>Assignment 3: UK airports (P5, P6, M2)</b>
<b>Feedback on assignment</b>

## **Topic and suggested assignments/activities and/assessment**

Investigation into GA and the organisations within the industry.

Visit to a GA terminal or GA airfield to view facilities and witness first hand the role of GA.

Class discussion on how GA organisations link with other aviation sectors.

Assignment workshop to research P7, M3.

### **Preparation for assignment**

#### **Assignment 4: How general aviation (GA) organisations operate (P7, M3)**

##### **Feedback on assignment**

Investigation into the role of regulatory bodies.

Learner research into the role of regulatory bodies.

Guest speaker from UK Border Force to deal with the practical application of border control.

Investigation into how trade associations support and represent the aviation industry.

Class discussion on the role of regulatory bodies and trade associations.

An examination into the different types of ancillary organisations and their role in the aviation industry.

Guest speaker from a handling agent to talk about their role and how they support other sectors of the industry.

Class discussion on how regulatory bodies, trade associations and ancillary organisations work together to create a safe and secure effective system.

Assignment workshop to research P8, P9, P10 and M3.

### **Preparation for assignment**

#### **Assignment 5: The aviation regulatory bodies, trade associations and ancillary organisations (P8, P9, P10, M3)**

##### **Feedback on assignment**

Review of the unit bringing it all together to investigate the scale of the UK aviation industry – considering trends, operating characteristics and the organisations that make up the overall industry.

Assignment workshop to research D1.

### **Preparation for assignment**

#### **Assignment 6: The scale of the UK aviation industry (D1)**

##### **Feedback on assignment**

## **Assessment**

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

### **P1 – P2 – M1**

To achieve P1, learners must outline the scale of the UK aviation industry. This can be achieved by the production of a series of graphs and tables, with a description of what each graph or table demonstrates. Learners will need to ensure that all items listed in the content are covered in the description.

To achieve P2, learners will need to identify major changes and trends and anomalies that can be identified from the information provided in P1. For example, an examination of a graph of mppa at UK airports will reveal an overall trend upwards with a few year-on-year reductions in mppa. To achieve M1, learners will need to explain the changes and trends they have identified linking this to P1, i.e. for the example given above learners will explain this cyclical pattern and the underlying reasons for major changes in mppa.

### **P3 – P4**

To achieve P3, learners need to set the scene by describing the different types of commercial airlines. Learners must include in their descriptions all the items listed in the unit content. A checklist may be beneficial to ensure full coverage of this range. P4 leads on from P3, and learners need to compare the operating characteristics of the different types of airlines and comment on their main differences, for example a cargo charter and a passenger charter will operate in much the same way but the cargo will not return and their destinations are likely to be very different. Learners will be expected to compare characteristics in full, for example, the flexible nature of some of the tickets available on a full service scheduled airline will need to be compared. Wherever possible, learners need to use examples and a description of a service could be based on British Airways (BA). Some airlines, such as Virgin Atlantic, are not good examples of full service scheduled airlines as they offer only long-haul routes, but they could be used as an example if their shortfalls in service levels are identified.

### **P5 – P6 – M2**

For P5, learners will need to indicate on a map of the UK the location of all the major airports and at least five regional and five local airports. Learners need to describe the different types of airport including who owns them and their ownership structure.

Airport operating characteristics must be compared to achieve P6. The comparisons should be based on one airport from each of the three categories (major, regional and local). Learners must compare the operating characteristics of the different types of airports and comment on their main differences. For example, a comparison of Manchester Airport (major) and East Midlands Airport (regional) would reveal that one has significantly more passengers and the other has significantly more cargo.

To achieve M2, learners need to discuss why an airline might base its operation at a particular airport, for example BA at London Heathrow (LHR), Jet2.com at Leeds Bradford Airport (LBA). Access to a particular market would be an obvious answer, but there are many other factors, e.g. airport facilities, no competition. Learners are expected to consider and comment on a range of different reasons.

### **P7 – M3**

To achieve P7, learners must explain how general aviation (GA) organisations operate. Learners should cover the range of operations listed in the content using examples of organisations from the three different types (aircraft operator, airfield operator, management and control).

For M3, learners should expand on P7 to focus on three different types of GA organisation to analyse their role and highlight links between them and other aviation sectors.

## P8 – P9 – P10 – M4

To achieve P8 and P9, the learner will have to analyse the role of regulatory bodies and trade associations to the UK aviation industry. The organisations that need to be covered are listed in the unit content. The natural conclusion is that regulatory bodies produce rules that are mandatory and trade associations produce useful guidance and advice, but in what fields are these rules and guidance set and why do some need to be strictly enforced. An important role of trade associations is to lobby governments and learners need to understand how this works and why it is necessary.

To achieve P10, learners need to analyse the role of ancillary organisations in relation to aviation. There are a large number of organisations involved in P10 and learners can group them together (e.g. aircraft manufacturers, handling agents) to analyse their role in supporting the industry. Whilst frequent travellers will be aware of terminal retail operations, tutors might like to emphasise the important role of organisations such as Rolls Royce; one of the three main global suppliers of aircraft engines. Learners should ensure that they cover the full range as listed in the unit content.

M4 needs to take the analysis of regulatory bodies, trade associations and ancillary organisations further by evaluating how they all fit together to provide a supportive framework which keeps the industry safe and secure. Learners may benefit from drawing a diagram of this framework and explaining how it all fits together to provide a seamless safety system.

## D1

In D1, learners will need to use the information obtained through the pass and merit criteria to discuss the scale of the UK aviation industry. Learners will need to comment on trends for the industry and the organisations that operate within it and how they link. Learners should consider the operating characteristics perhaps commenting on contrasting characteristics, such as airlines employ more staff than airports, where the main airports and airlines are located and how they might compare financially.

## Programme of suggested assignments

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

Criteria covered	Assignment title	Scenario	Assessment method
P1, P2, M1	Assignment 1: The importance of aviation to the UK	Working as a consultant to the UK government you are required to give a presentation on the scale of the aviation industry in the UK and identify any specific trends and anomalies.	Presentation
P3, P4	Assignment 2: UK airlines	As an employee of a UK airport you are required to write a series of guides to UK aviation.	A leaflet covering commercial airlines
P5, P6, M2	Assignment 3: UK airports	As an employee of a UK airport you are required to write a series of guides to UK aviation.	A leaflet covering UK airports

<b>Criteria covered</b>	<b>Assignment title</b>	<b>Scenario</b>	<b>Assessment method</b>
P7, M3	Assignment 4: How general aviation (GA) organisations operate	Working for a transport trade journal, you are to write an article investigating the way the GA sector operates highlighting links from three different types of organisation to other aviation sectors.	Investigation/report
P8, P9, P10, M4	Assignment 5: The aviation regulatory bodies, trade associations and ancillary organisations	As an employee of a UK airport you are required to write a series of guides to UK aviation.	Two leaflets, one covering regulatory bodies and trade associations and another covering ancillary organisations
D1	Assignment 6: The scale of the UK aviation industry	Working for a transport trade journal, you are to write an article investigating the UK aviation industry.	Investigation/report

## Links to other BTEC units

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

Level 2	Level 3	Level 4
n/a	Unit 4: Inter-relationships Within the UK Aviation Industry Unit 5: Development of the UK Aviation Industry Since 1945 Unit 14: Airport and Airline Commercial Operations	Unit 18: Researching Current Issues in Aviation

## Essential resources

Learners must have access to relevant published resources and the internet.

## Employer engagement and vocational contexts

There is ample opportunity to visit aviation organisations and invite guest speakers from industry to talk to learners.

## Delivery of personal, learning and thinking skills

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

Skill	When learners are ...
<b>Independent enquirers</b>	exploring the scale of the UK aviation industry; assessing the value based on research and data.

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

Skill	When learners are ...
<b>Creative thinkers</b>	comparing the operating characteristics of different commercial airlines and types of airports
<b>Self-managers</b>	managing the assessment of the unit.

## ● Functional Skills — Level 2

Skill	When learners are ...
<b>ICT — Use ICT systems</b>	
Select, interact with and use ICT systems independently for a complex task to meet a variety of needs	investigating the scale of UK aviation and presenting data on passengers, cargo, financial information and employment
Use ICT to effectively plan work and evaluate the effectiveness of the ICT system they have used	planning and producing the assessment
Manage information storage to enable efficient retrieval	storing and retrieving passenger, cargo, financial and employment data in order to describe the scale of UK aviation
Follow and understand the need for safety and security practices	ongoing
Troubleshoot	as required.
<b>ICT — Find and select information</b>	
Select and use a variety of sources of information independently for a complex task	investigating the scale of UK aviation
Access, search for, select and use ICT-based information and evaluate its fitness for purpose	investigating the scale of UK aviation and presenting data on passengers, cargo, financial information and employment.
<b>ICT — Develop, present and communicate information</b>	
Enter, develop and format information independently to suit its meaning and purpose including: <ul style="list-style-type: none"> <li>• text and tables</li> <li>• images</li> <li>• numbers</li> <li>• records</li> </ul>	presenting information on the scale of the UK aviation industry
Bring together information to suit content and purpose	presenting information on the scale of the UK aviation industry
Present information in ways that are fit for purpose and audience	presenting information on the scale of the UK aviation industry
Evaluate the selection and use of ICT tools and facilities used to present information	throughout assessment.

<b>Skill</b>	<b>When learners are ...</b>
<b>Mathematics</b>	
Draw conclusions and provide mathematical justifications	interpreting passenger, cargo, financial and employment data to describe the scale of the UK aviation industry and identify recent changes and trends.
<b>English</b>	
Speaking and listening – make a range of contributions to discussions and make effective presentations in a wide range of contexts	discussing the operating characteristics of different commercial airlines and different types of airports
Reading – compare, select, read and understand texts and use them to gather information, ideas, arguments and opinions	investigating the scale of UK aviation and identifying recent changes and trends
Writing – write documents, including extended writing pieces, communicating information, ideas and opinions, effectively and persuasively	writing a report to analyse the role of regulatory bodies, trade associations and ancillary organisations.