

Unit 6: Aviation Geography and Terminology

Unit code:	T/504/2281
QCF Level 3:	BTEC Nationals
Credit value:	6
Guided learning hours:	36

● Aim and purpose

The aim of this unit is to give learners knowledge, understanding and skills to provide accurate and relevant information about airline routes, airport and flight information, climate and health.

● Unit introduction

Any person wishing to work in the aviation industry needs to develop knowledge of the location of major destinations and airports around the world. This unit will enable learners to expand their knowledge in relation to countries, capitals, hubs, gateways and air travel destinations and to recognise air travel routes through different hemispheres, International Air Transport Association (IATA) areas and sub-areas via different global indicators.

Learners will be introduced to the basic aviation language used throughout the industry by referring to three-letter codes, airline codes, phonetic alphabet and other frequently used terminology. Learners will be assessed on their ability to provide accurate and sufficient information relating to flights including airport information, aircraft configuration, class of service, type of fare, rules, conditions of travel, entry and exit requirements and elapsed flying times. Learners will have an opportunity to learn about health issues related to air travel, health, climate and entry and exit requirements of global destinations. They can further investigate the effects of air travel for passengers and crew.

● Learning outcomes

On completion of this unit a learner should:

- 1 Know worldwide geography in relation to airline routing
- 2 Understand the importance of providing accurate and relevant air travel information using aviation terminology
- 3 Understand how climate and health factors impact on air passengers and crew.

Unit content

1 Know worldwide geography in relation to airline routeing

Worldwide features across airline routes:

- major international routes across the three IATA areas and their sub-areas
- global features (continents, hemispheres, significance of lines of latitude and longitude, time zones, oceans)
- global indicators, e.g. routeing and impact on mileage and fare, potential stopovers
- political features on maps (boundaries, countries, capital cities, hubs and major airports)
- physical features on maps (mountain ranges, deserts, tundra, ice caps, major forests, seas, rivers, lakes)

2 Understand the importance of providing accurate and relevant air travel information using aviation terminology

Flying times using reference sources, e.g. atlas, Official Airline Guides (OAG):

- 24-hour clock
- local time
- time zones and international date line, e.g. USA – Eastern Time, Pacific Time, Mountain Time, Australia – Western Standard Time, Eastern Standard Time
- Greenwich Mean Time (GMT) and Daylight Saving Time (DST)
- elapsed flying time

Airport information using reference sources, e.g. OAG, airport websites:

- location
- facilities (landside and airside)
- services, e.g. public transport, car parking
- terminals and gates
- hand luggage restrictions, e.g. liquids
- IATA three-letter airport/city codes

Flight information using reference sources, e.g. OAG, GDS, airline websites:

- aircraft type and configuration, e.g. 757, single aisle, 3 + 3
- fare types and abbreviations, e.g. PEX, APEX
- class of service and abbreviations, e.g. first (F), business (C), economy (Y), premium economy
- rules, e.g. validity, minimum stay, maximum stay
- conditions of travel, e.g. check-in times, baggage allowance, unaccompanied minors, carriage of sports equipment
- delayed or cancelled flight implications, e.g. with a scheduled airline for a special ticket or a normal ticket, with a low-cost carrier

- missed flight implications, e.g. with a scheduled airline or a low-cost carrier
- flight codes
- IATA codes, e.g. aircraft
- commonly used abbreviations, e.g. ETA, STA, STD, PAX
- common terms, e.g. priority boarding, online check in, e-tickets, bag drop
- use of phonetic alphabet
- airport information for stopover or transit passengers

Entry and exit requirements for global destinations using reference sources, e.g. OAG, government websites:

- passport
- visa and health requirements at destination
- sources of information, e.g. government, travel industry

3 Understand how climate and health factors impact on air passengers and crew

Climatic conditions at destinations:

- global regions (equatorial, tropical, temperate, arctic)
- seasonal variations, e.g. monsoon, snowfall, hurricanes, wet and dry seasons, extreme heat, extreme cold
- influences, e.g. gulf stream, winds

Health factors at the destination:

- specific area health warnings, e.g. malaria, cholera, typhoid, HIV/AIDS, other epidemics
- precautions available, e.g. vaccination, immunisation, pharmaceutical, not consuming local water, avoidance of heat and sun, hygiene awareness, care when swimming in local waters

Health factors associated with flying:

- jet lag (fatigue, circadian rhythms)
- deep vein thrombosis
- hypoxia
- dehydration
- effect of alcohol at altitude
- air quality, e.g. recirculated

Assessment and grading criteria

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

Assessment and grading criteria		
To achieve a pass grade the evidence must show that the learner is able to:	To achieve a merit grade the evidence must show that, in addition to the pass criteria, the learner is able to:	To achieve a distinction grade the evidence must show that, in addition to the pass and merit criteria, the learner is able to:
P1 Identify major worldwide routes and global indicators across International Aviation Transport Association (IATA) areas and sub-areas [IE]	M1 Analyse two multi sector journeys with different global indicators originating from the UK in relation to the political and physical features across the routes	
P2 Locate key features using political and physical maps across given worldwide routes [IE]		
P3 Explain how to calculate elapsed flying times, giving accurate examples		
P4 Provide air travel information using aviation terminology for given situations [CT]		
P5 Explain the importance of providing accurate and sufficient airport and flight information to passengers		
P6 Explain how climatic conditions at specific destinations may affect air passengers and crew	M3 Analyse how climatic and health factors affect air passengers and crew when flying to global destinations for given scenarios	D1 Evaluate how risks posed by climatic and health factors could be minimised
P7 Outline health factors which can affect air passengers and crew when flying to global destinations [EP]		

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

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

Essential guidance for tutors

Delivery

This unit gives learners knowledge of the location of countries, capitals and airports around the world. In addition, they should develop their knowledge by learning about IATA conference areas and sub-areas, global indicators, three-letter city and airport codes and geographical features. Learners will have an opportunity to apply terminology used in the aviation industry. Learning outcome 1 can be delivered through a variety of practice activities using atlases, interactive geography games and practical tests. Learners should be encouraged to make use of the many interactive geography quizzes online to develop their confidence in developing this skill with effective use of resources. By developing this knowledge learners should be prepared to move forward to identify physical features passed over on at least two different multi-sector flights; one flying in an easterly direction and one in a westerly direction.

Learning outcome 2 is about using a variety of reference sources to provide information to passengers. Learners should be given the opportunity to develop their knowledge of all the types of information listed in the unit content and the associated terminology. Learners should be able to describe the type of information required by passengers, such as the different fare types for full service scheduled flights for example APEX, PEX, and those for seats on low-cost scheduled flights. They should be able to explain to passengers the differences between APEX and PEX and the rules relating to validity such as minimum and maximum stay, stopovers and advance purchase. They should be able to explain the conditions of sale relating to cancellation charges or changed bookings. Learners should build their knowledge in the context of a variety of passenger scenarios such as a business person travelling on a PEX fare to China with stopovers, or a family travelling to Geneva on easyJet for a Christmas holiday. They should be able to give information about baggage allowances, minimum connecting times, local times, check-in times, airport facilities, terminals and onward travel details etc.

Learners should have the opportunity to develop their knowledge of what happens if the flight is cancelled or if a passenger misses their flight, and the differences between a passenger with a normal fare ticket on a scheduled flight and one with an APEX ticket or a seat with a low-cost carrier. This learning outcome is about understanding the basics of travelling as an air passenger. Learners can undertake role play activities in a variety of situations such as working for an airline at the airport sales desk or on reservations, working as cabin crew or as a ground handler, in the business lounge or at the check-in desk.

Learning outcome 3 will give learners knowledge of climatic conditions around the world and the seasonality at various destinations. A basic understanding of extreme climatic conditions should be demonstrated. Learners must also be aware of the entry and exit requirements of air passengers travelling to major worldwide destination in relation to passports, visas and health vaccination requirements. An understanding of the health issues attached to flying, particularly on long haul flights, will enable learners to work towards higher grades.

Outline learning plan

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

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

Topic and suggested assignments/activities and/assessment
<p>Introduction and overview of the unit. The unit content should be explained and the relevance to operations in the aviation industry.</p> <p>Use outline maps and atlases to assess prior knowledge of continents, oceans, mountain ranges.</p> <p>Introduction to IATA three-letter city and airport codes.</p>
<p>Introduce Assignment 1.</p> <p>Give learners reference maps showing IATA conference areas, sub-areas, global indicators, hemispheres. Learners could be given a table with a list of cities and asked to find the IATA area, sub-area, country, hemisphere and three-letter code for each.</p> <p>Use outline maps to locate capitals, major airports, seas, rivers, lakes, forests and mountain ranges in IATA Area 1. Encourage the use of three-letter city and airport codes when locating capitals and airports. Learners should be encouraged to learn the main UK airports without reference to an atlas. Use A3-sized outline maps of the different continents, with markings, to guide learners to locate airports, capital cities and physical features.</p>
<p>Continuous testing of previous work will ensure learners are equipped for assessment.</p> <p>Use outline maps to locate capitals, major airports, seas, rivers, lakes, forests and mountain ranges in IATA Area 2. Encourage the use of three-letter city and airport codes when locating capitals and airports.</p>
<p>Continuous testing of previous work will ensure learners are equipped for assessment.</p> <p>Use outline maps to locate capitals, major airports, seas, rivers, lakes, forests and mountain ranges in IATA Area 3. Encourage the use of three-letter city and airport codes when locating capitals and airports.</p>
<p>Revision of global, political and physical geography features.</p> <p>Global indicators AT, AP, EH, TS, PA should be explained and applied to example flight routes.</p>
<p>Revision</p> <p>Practice test – either paper-based or interactive test using only an atlas for reference. Assessment could include two scenarios where a client states the cities they want to visit and the learner has to plot them and put them in a logical order of flight.</p>
<p>Assessment in a controlled environment to ensure independent effort and ability. Less reliance on an atlas and evidence of completing the assessment accurately and efficiently.</p>
<p>Preparation for assignment</p> <p>Assignment 1: Know your Aviation Geography (P1, P2, M1)</p> <p>Feedback on assignment</p>
<p>Following on from Assignment 1, where learners have been introduced to time zones, tutors should explain how to calculate elapsed flying times. Start with clock times and local times and introduce simple exercises for calculating flying times for flights from the UK both in a westerly and easterly direction. Explain the implications of daylight saving time (DST). Learners should be given a range of exercises and then explain how they have undertaken their calculations.</p>

Topic and suggested assignments/activities and/assessment

Preparation for assignment

Assignment 2: Part A: Elapsed Flying Times (P3)

Feedback on assignment

Demonstrate how to find airport information using OAG online, airport websites etc. Information to include terminals, facilities, public transport, car parking, distance to city centre.

Discuss and encourage learners to compare different types of airport and how they vary in relation to location, terminals, facilities, public transport, security, network.

Introduce the phonetic alphabet and verbally test learners with examples of booking references to be called back using the phonetic alphabet.

Demonstrate how to encode and decode for airlines, aircraft, cities/airports followed by an activity to encourage learners to put lessons learned into practice. A list of sample codes could be provided to enable learners to look up the information independently.

Learn commonly used aviation industry abbreviations and terminology, e.g. ETA, STD, priority boarding, bag drop.

Demonstrate how to find flight-related information through airline websites and GDS.

Explain days of operation, schedules, terminal, airline, routing, class of service, aircraft type followed by an activity to encourage learners to put lessons learned into practice. A sample timetable or access to airline websites could be provided to enable learners to look up the information independently.

Demonstrate how to provide information on conditions of travel such as check-in times, baggage allowance, unaccompanied minors etc.

Discuss the needs of different types of airline passenger.

Types of flights, i.e. direct non-stop, direct with intermediate stop, transfer connection, short haul, long haul, domestic, international, interline. Encourage learners to relate from their own experiences.

Present information on the different classes available through use of airline videos or short videos available from major airline websites. Give learners class codes and discuss fare types.

Examine the conditions of travel for both full service scheduled and low-cost scheduled fares. Explore the implications of cancelled, delayed or missed flights for both types of passenger.

Discuss and illustrate sources of information on passport, visa and health requirements when visiting different countries.

Preparation for assignment

Assignment 2: Part B: Provide Air Travel Information in a Range of Scenarios Using Aviation Terminology (P4)

Feedback on assignment

Discuss in groups the importance of providing accurate and sufficient flight information. Provide scenarios of when inaccurate or insufficient information has been given. Discuss the consequences.

Preparation for assignment

Assignment 2: Part C: The importance of providing accurate and sufficient information and the consequences of not doing so (P5 and M2)

Feedback on assignment

Tutor presentation on different climatic conditions with use of DVDs or online videos to show the impact of extreme climatic conditions. Distribute maps illustrating areas of the world affected by climatic conditions, seasonal variations and climatic influences.

Learner activity on providing descriptions of health issues around the world. Match health issues to the precautions available to travellers and advice on reducing the risk. Identify the necessary documentation required to permit entry into affected areas.

Topic and suggested assignments/activities and/assessment

Tutor presentation on other health issues associated with flying.

Small-group exercise to describe health issues associated with flying, how they affect the traveller and tips on how to avoid them.

Preparation for assignment

Assignment 3: Issues Affecting Global Air Travel (P6, P7, M3, D1)

Feedback on assignment

Assessment

A variety of assessment methods could be used including controlled tests and written work. It is recommended that more than one method is used to cater for different learning styles within the group.

The assessment criteria shown in the assessment and grading grid can be grouped together to enable learners to expand on one criterion to gain the higher grades. Where possible, learners should be encouraged, and given the opportunity, to meet the relevant higher grades at the same time as they attempt the appropriate pass criteria.

Group activities may lend themselves to certain themes or assessments but it is essential that all learners keep a portfolio of their own work and have evidence of individually covering all the criteria they are credited for.

P1 – P2 – M1

Learners will be given an opportunity to identify places, routes, IATA conference areas and sub-areas, countries, capitals, airports and physical features through given routes.

To achieve P1, learners must identify at least six major worldwide routes evidencing the full range of global indicators. To demonstrate they have knowledge of the three IATA areas and all the IATA sub-areas, learners should locate these on blank maps to supplement their evidence. Learners should define each of the global indicators.

For P2, learners should be given specific worldwide routes and demonstrate that they are able to locate key political and physical features across them. Outline maps should be provided with a list of places to enable learners to develop and demonstrate knowledge of the locations of at least 10 countries in each IATA area, their capital cities and major gateway airports. In addition, learners should be able to locate the main mountain ranges, deserts, oceans and seas. Learners should have access to an atlas and demonstrate they can use this effectively for P2.

To achieve M1, learners should expand on their knowledge in P1 and P2 to analyse two multi-sector routes with different global indicators in relation to the political and physical features across the routes. Evidence can be presented on a blank map and explained verbally.

P3 – P4 – P5 – M2

To achieve P3, learners should explain the process of calculating elapsed flying times, demonstrating their understanding through their own accurate examples. Flights can originate from the UK but must include both easterly and westerly directions and be at different times of the year to take into consideration Daylight Saving Time (DST). At least one example should cross the International Date Line in either an easterly or westerly direction.

For P4, learners should provide airport and flight information relevant to air passengers travelling on both low-cost and full service airlines. Flight scenarios should be for both single and multi-sector journeys and routes should be from the UK in both easterly and westerly directions. Tutors should give learners a range of scenarios to enable coverage of all the listed unit content for airport and flight information and entry and

exit requirements. Learners should use reference sources to provide accurate and up-to-date information. It is not necessary for learners to go through the complex process of selecting flights to meet air passenger requirements, only to demonstrate a knowledge and understanding of the type of information required by a range of air passengers. For example, learners should demonstrate that they understand different fare types and the associated terminology such as APEX and PEX fares, the terms relating to e-tickets, bag drop, priority boarding, minimum connecting times and the entry and exit requirements for worldwide destinations. It is recommended that learners firstly describe all the types of information and associated terminology as listed in the unit content and then use sources of reference to provide the information either verbally or in writing for the given scenarios.

To achieve P5, learners must explain the importance of providing accurate and sufficient air travel information to passengers. The evidence for P5 can be an expansion of the evidence for P4 and can be assessed at the same time, or, alternatively, it can be a general explanation covering airport and flight information and entry and exit requirements.

To achieve M2, learners should explain the consequences of providing inaccurate or insufficient air travel information in specific scenarios, taking into consideration the impact this may have on organisations. M2 is a progression from P3, P4 and P5 and learners should provide examples covering a range of these types of inaccurate or insufficient information. Examples such as inaccurate connecting time or terminal information resulting in a passenger missing their flight, inaccurate baggage allowance information resulting in a passenger having to pay excess, inaccurate and insufficient information about entry requirements resulting in a passenger being denied entry to a destination. Impacts on organisations may be litigation, compensation, loss of market share, decreased profits, and increased training expense.

P6 – P7– M3 – D1

To achieve P6, learners should explain how climatic conditions at specific destinations may affect both air passengers and crew; this should consider seasonal variations and learners should choose destinations which give them the opportunity to address all elements of the unit content.

For P7, learners are required to outline health factors which can affect air passengers and crew when flying to global destinations, covering the unit content.

M3 should draw on the work from P6 and P7 with learners analysing how climatic and health factors affect air passengers and crew when flying to global destinations, for given scenarios. For D1, learners should evaluate how the risks posed to air passengers and crew by climatic conditions and health factors can be minimised.

Programme of suggested assignments

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

Criteria covered	Assignment title	Scenario	Assessment method
P1, P2, M1	Assignment 1: Know your Aviation Geography	You have just been employed as a trainee airline reservations consultant and are required to demonstrate your knowledge of aviation geography and associated terminology.	Controlled assessment with use of an atlas
P3, P4, P5, M2	Assignment 2: Part A: Elapsed Flying Times Part B: Provide Air Travel Information in a Range of Scenarios Using Aviation Terminology Part C: The Importance of Providing Accurate and Sufficient Information and the Consequences of Not Doing So	You have successfully completed your training and have now been appointed as a reservations consultant with the airline.	Role play and written activities
P6, P7, M3, D1	Assignment 3: Issues Affecting Global Air Travel	To ensure you can provide additional and necessary information to an air passenger you must demonstrate you have knowledge of the issues that can affect global air travel and a clear vision of the journey on the route selected.	Information leaflet on climatic conditions and health issues

Links to other BTEC units

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

Level 2	Level 3	Level 4
Unit 34: Air Fares and Ticketing 1	Unit 1: The UK Aviation Industry Unit 7: Customer Service in the Aviation Industry Unit 13: Preparation for Employment in the Aviation Industry Unit 35: Air Fares and Ticketing 2	n/a

Essential resources

Learners will need access to a Worldwide Travel Atlas and outline maps. In addition, learners must have access to computers and ideally a global distribution training package for learning outcome 2.

Employer engagement and vocational contexts

Visits to airports and airline reservation offices and/or guest speakers from the aviation industry are recommended to enhance the importance of this unit.

Indicative reading for learners

Textbooks

Cosgrove B – *Pilot's Weather* (Airlife Publishing, 1999) ISBN 978-1840370270

World Travel Atlas, 11th Edition (Columbus Travel Media, 2010) ISBN 978-0956606600

World Travel Guide, 25th Edition (Columbus Travel Media, 2006) ISBN 978-1902221939

Websites

www.aviation-health.org

Aviation Health – non-profit organisation promoting health and wellbeing of air passengers

www.caa.co.uk

Civil Aviation Authority – UK aviation regulator

www.iata.org

International Air Transport Association

Videos may be useful to demonstrate extreme climatic conditions and how they can impact on a destination – a wide range of videos are available on the internet.

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 ...
Independent enquirers	researching, locating and providing information on the range of IATA areas, sub-areas, political and physical features around the world, along with airport and flight information
Creative thinkers	matching the needs of the different flight scenarios
Effective participators	discussing the considerations of air travel.

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 ...
Independent enquirers	researching, locating and providing information on the range of IATA areas, sub-areas, political and physical features around the world, along with airport and flight information by using the internet and atlases
Creative thinkers	researching the required information and identifying the needs of different customers
Reflective learners	researching airport and flight information and matching it to the requirements of the assignment as well as enhancing grading opportunities by reflecting on all the learning outcomes and providing an analysis
Effective participators	discussing the results of research carried out throughout the unit.

● Functional Skills — Level 2

Skill	When learners are ...
ICT — Use ICT systems	
Select, interact with and use ICT systems independently for a complex task to meet a variety of needs	using online interactive geography quizzes to develop their knowledge of political and physical features
Use ICT to effectively plan work and evaluate the effectiveness of the ICT system they have used	planning assignments
Manage information storage to enable efficient retrieval	storing notes, research findings and assignments in a logical order in folders
Follow and understand the need for safety and security practices	using passwords and trusted internet sites
Troubleshooting	as required.
ICT — Find and select information	
Select and use a variety of sources of information independently for a complex task	researching airport and flight information to present appropriately through the use of a range of websites
Access, search for, select and use ICT-based information and evaluate its fitness for purpose	researching airport and flight information to present appropriately through the use of a range of websites.
ICT — Develop, present and communicate information	
Enter, develop and format information independently to suit its meaning and purpose including: <ul style="list-style-type: none"> • text and tables • images • numbers • records 	presenting information on airports and flights in a variety of forms such as timetables, images of the benefits of business class and flight numbers
Bring together information to suit content and purpose	presenting information on airports and flights from research carried out
Present information in ways that are fit for purpose and audience	presenting information on airports and flights that is appropriate to the needs of the air passenger
Evaluate the selection and use of ICT tools and facilities used to present information	choosing the most appropriate ICT tool to present the airport and flight information
Select and use ICT to communicate and exchange information safely, responsibly and effectively including storage of messages and contact lists	e-mailing information and tasks to tutors.

Skill	When learners are ...
Mathematics	
Understand routine and non-routine problems in a wide range of familiar and unfamiliar contexts and situations	calculating actual and elapsed flying time
Identify the situation or problem and the mathematical methods needed to tackle it	taking into account time zones
Select and apply a range of skills to find solutions	calculating actual and elapsed flying time.
Use appropriate checking procedures and evaluate their effectiveness at each stage	
Interpret and communicate solutions to practical problems in familiar and unfamiliar routine contexts and situations	
Draw conclusions and provide mathematical justifications	
English	
Speaking and listening – make a range of contributions to discussions and make effective presentations in a wide range of contexts	discussing the considerations of air passengers and crew
Reading – compare, select, read and understand texts and use them to gather information, ideas, arguments and opinions	presenting airport, flight, climatic and health information
Writing – write documents, including extended writing pieces, communicating information, ideas and opinions, effectively and persuasively	presenting airport, flight, climatic and health information appropriate to a customer's understanding.