

# Unit 15: Passenger Terminal Management Within the Aviation Industry

<b>Unit code:</b>	<b>H/504/2289</b>
<b>QCF Level 3:</b>	<b>BTEC Nationals</b>
<b>Credit value:</b>	<b>6</b>
<b>Guided learning hours:</b>	<b>36</b>

## ● Aim and purpose

The aim of this unit is to give learners an understanding of how aviation passenger terminals are managed.

## ● Unit introduction

Terminal management is perhaps one of the most interesting, diverse and rewarding careers in aviation; it is both dynamic and constantly changing. In its simplest form terminal management can be compared to facilities management, such as managing a busy shopping centre, but it is much more than that due to the demands of the different organisations based in the terminal and the vagaries of air travel.

The unit starts by examining airline and airport passenger service standards, for these standards are the building blocks of the terminal management process. Standards will differ from airline to airline, but not so from airport to airport, as many of their standards are based on legal requirements such as fire certification.

The next aspect considers how the various flows of passengers, inbound and outbound, international and domestic, are coordinated and managed in what is a finite space. This is a complex business involving not just the airport and airlines, but a diverse group of agencies and interested parties.

The unit concludes by looking at the airport planning process and how it delivers new facilities and services in time to meet the anticipated demand. Given that a new terminal will take in the region of seven years from first consideration to finished building, this is a long process fraught with challenges that the terminal management team will need to face and overcome without too much inconvenience to airport users.

## ● Learning outcomes

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

- 1 Understand how airport and airline passenger service standards are monitored
- 2 Understand how to co-ordinate and manage passenger flows
- 3 Understand the importance of the airport planning process.

# Unit content

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## 1 Understand how airport and airline passenger service standards are monitored

Different types of airport passenger terminals:

- single terminal airports
- multiple terminal airports
- satellite terminals
- temporary
- stages of development, e.g. new buildings and facilities, older buildings, outdated, poor facilities, overcrowded, in need of updating

Airline passenger service standards:

- queue times, e.g. check-in, security
- baggage delivery times (first and last bag)
- stand and gate allocations
- delay procedures, e.g. food vouchers, hotel accommodation
- diversion procedures

Airport passenger service standards:

- queue length, e.g. check-in, security
- space standards for transit areas and lounges
- fire certification requirements, e.g. the numbers of able-bodied and disabled passengers allowed in certain areas

Airline and airport passenger service standards monitoring:

- visual observation
- CCTV
- staff reports
- logbooks
- customer feedback (airline and passenger)

## 2 Understand how to co-ordinate and manage passenger flows

Passenger flow coordination:

- determine the main passenger flows through the terminal (domestic arrivals and departures, international arrivals and departures and transit)
- coordinate: liaise with airlines, handling agents and control authorities to coordinate passenger flows

Disruptions to passenger flows:

- congestion airside (aircraft) and landside (passenger)
- flight delays due to operational issues, e.g. aircraft technical problems, missed slot, air traffic control (ATC) disruptions, the knock-on effect of earlier flight delays
- bad weather
- security alerts
- surface transport problems, e.g. rail service disruptions due to industrial action, road traffic accident
- industrial action
- special events, e.g. football matches, conferences, pop concerts
- impact of disruption (congestion)

Passenger flow management (control and direct passenger flows):

- provide extra facilities, e.g. seating, catering, overflow areas
- move passengers out of the terminal, e.g. early boarding, hotels

## 3 Understand the importance of the airport planning process

Auditing and measuring current facilities and services:

- list the number and type of facilities and services available
- measure the size of areas in square metres
- distinguish between circulation space, seating areas and staff accommodation

Demand forecasting:

- determining the number of passengers that will use the terminal at a future point in time in order to provide for their needs relatively comfortably

The planning processes:

- audit current facilities and services
- measure the capabilities of current facilities and services
- forecasting demand
- plan and build facilities in time to meet demand
- plan and provide services in time to meet demand

## Assessment and grading criteria

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

Assessment and grading criteria		
To achieve a pass grade the evidence must show that the learner is able to:	To achieve a merit grade the evidence must show that, in addition to the pass criteria, the learner is able to:	To achieve a distinction grade the evidence must show that, in addition to the pass and merit criteria, the learner is able to:
<b>P1</b> Identify the different types of airport terminals	<b>M1</b> Consider how a major event might be organised by airport terminal management	<b>D1</b> Assess the difficulties encountered when opening a new airport terminal, making recommendations for improvements
<b>P2</b> Outline airline passenger service standards in relation to airport terminal management		
<b>P3</b> Outline airport passenger service standards in relation to airport terminal management		
<b>P4</b> Describe how airline and airport passenger service standards are monitored		
<b>P5</b> Explain how passenger flows are co-ordinated [IE]		
<b>P6</b> Discuss disruptions to passenger flows [IE]		
<b>P7</b> Explain how passenger flows are managed [IE]		
<b>P8</b> Discuss the process of auditing and measuring current facilities and services	<b>M2</b> Analyse the processes involved in the construction of a new airport passenger terminal	
<b>P9</b> Explain the importance of demand forecasting		
<b>P10</b> Outline the planning processes to provide facilities and services in time to meet demand		

**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	RL – reflective learners	SM – self-managers
	CT – creative thinkers	TW – team workers	EP – effective participators

# Essential guidance for tutors

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## Delivery

In delivering this unit it would be helpful if learners were to visit an airport passenger terminal. It is accepted that access airside will be difficult to attain, especially for large groups, but a visit landside should suffice to gain an understanding of how passenger terminals are managed (most airports are accommodating if you let them know that you are visiting and what you are there for). During the visit attention should be drawn to passenger flows, which can be gained from looking at direction signs and from a simplistic diagram of the terminal, these are normally available on individual airport websites. In addition, learners should note logjams in traffic, times at which passengers are allowed through into the departure lounges and called to the boarding gate and how queues are managed. If these are not obvious, wait for a lull in traffic and make a few enquires at the information desk. If the visit can be backed up by a guest speaker working in terminal management, learners will have the majority of information they need to complete the unit. The rest they can research on websites and appropriate textbooks, albeit most textbooks dealing with these issues are at graduate level.

Airline service standards are usually available on websites or if necessary by telephone enquiry. Airport service standards are not so easily available and if you are unable to obtain a speaker you may have to refer to generic standards quoted in textbooks. Monitoring service standards is straightforward and it can be delivered simply by discussing the various options with learners. Be mindful that if problems occur terminal management will be alerted quickly by airport users or tenants, terminal management does not work or act in isolation, but as part of a system.

Learning outcome 2 should be dealt with on an airport visit. Learners will need to understand that there will be standard times for processing passengers, but these standard times will be changed in response to disruptions in the flight schedule due to the factors listed in the unit content. These factors might apply to one, several or all flights depending on the severity of the situation. Terminal management will need to deal with these disruptions to flight schedules in a manner that minimises the impact on their customer airlines yet maintains the integrity of terminal operations. The options available in response to disruptions are limited and require considerable cooperation and coordination between the airport, the airline or their representative and all other interested parties. Delivery of this content would ideally start by examining one delay and discussing its implications, this can then be increased in progressive stages by considering two, three, four delays etc, until all flights delayed. A situation where all flights are delayed coupled with no sign of returning to normality will require drastic action by all parties, particularly at inherently congested airports such as London Heathrow (LHR).

Learning outcome 3 deals with the airport planning processes all airports have and will develop over the years and, therefore, they have to plan to bring new facilities and services on stream in time to meet anticipated demand. The process commences with an audit of existing facilities and services and their relative capacity. Capacity is normally measured by space and the amount allocated per person will depend on what the space is used for, for example circulation space, seating areas. Tutors might like to draw attention to the building you are in and relate it to corridors, training/teaching rooms, catering areas, staff accommodation, etc. Space standards are generic although they do differ and some may be determined by fire certification for example only 600 people allowed on the first floor due to exit restrictions.

Some important issues worth stressing are as follows:

- 1 Figures such as 10 million passengers per annum (mppa) are of little use to airport planners as in the case of Rovaniemi Airport (Santa Claus Airport) most of their passengers arrive in December. All airports suffer to a greater or lesser degree with seasonal or peak issues and terminal passenger throughput needs to be expressed in hourly rates. How many passengers can be processed through a given area in one hour?

- 2 Airports in the UK, like all commercial organisations, cannot afford to provide buildings that have considerable amounts of unused space that will require no further additions for many years. There are some airports like this in the Middle East which have been built to impress or showcase the country but not in the UK. Airports or terminal buildings are built for a finite life with extra capacity planned in the form of extensions or satellites.
- 3 Peak problems, which can vary from year to year, are taken into account by accepting that some passengers might experience less than the ideal space standards and buildings may be designed in the knowledge that 5 per cent of passengers may experience some form of congestion. This situation is normal across all industries and walks of life. You can't build for an absolute future peak as it is intangible.

Forecasting the level of future demand is a complex and difficult process and the degree of accuracy of forecasts varies considerably. An examination of airport masterplans is testament to this situation as, at the time of writing this unit, most airport masterplans were written before the economic recession of the late noughties and their forecasts are now widely out of kilter with current passenger statistics. Forecasting demand is a difficult enough process when looking just a few months into the future. In looking 5, 10 or 15 years into the future it is even more difficult due to the number of unforeseen external factors that will impact on actual numbers, such as wars, terrorism, fuel price, taxation, economic activity, pandemics, environmental issues, etc. Why then do airport planners bother forecasting when they know that they are likely to be wrong? The flippant answer is because they have to; how else might we determine when a new terminal will be required. To overcome these issues airport planners normally use a range of forecasts – high, medium and low. The make up of these forecasts can be examined by referring to government air passenger demand forecasts although tutors might like to filter the content and refer to generic issues. Learners are not expected to understand complex forecasting models, just the factors that are taken into account in their formulation.

Government forecasts apart, most airport forecasts are built up far more simplistically by looking at how their route network and flights might develop. Learners will not have the inside knowledge to be able to do this but they could build up a passenger demand forecast for their local airport by extrapolating forward the average growth rate over the last 10 or 20 years (figures are available on the Civil Aviation Authority (CAA) website). A 10-year forecast will be sufficient and this could be used as the basis for considering the external factors that might impact on it (negative and positive) and the production of a high, medium and low passenger demand forecast for the airport. Learners can take comfort in the fact that their forecast might end up being wrong (just like the professionals), but at some stage in the future it will be right, hopefully not too far from their predicted date.

The final element is to plan and build facilities and services to meet anticipated demand. It was mentioned in the introduction that a new terminal will take in the region of seven years from first consideration to finished building, other services and facilities could take longer or shorter. Tutors might like to consider this process in relation to a major development at a local airport. On top of the factors already mentioned, other factors might include:

- 1 considering the various development options
- 2 detailed design of facilities
- 3 seeking planning approval
- 4 public consultation
- 5 planning enquiry
- 6 writing a tender specification
- 7 consulting with architects and builders about how the facility can be constructed without impacting too adversely on airport operations

- 8 consulting with airport tenants about the construction work
- 9 the provision of temporary facilities or services
- 10 the day-to-day management of the building work
- 11 bringing new facilities and services online
- 12 the opening ceremony.

## Outline learning plan

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

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

Topic and suggested assignments/activities and/assessment
Introduction and overview of the unit and the three learning outcomes.
A review of the unit assessment methods, along with timescales and hand-out and hand-in dates.
Discussion and research into the different type of airport passenger terminals.
Visit to an airport passenger terminal.
Discussion and research into airport and airline service standards.
Guest speaker working in terminal management.
Tutor input on how airline and airport passenger service standards are monitored.
Workshop to research Assignment 1.
<b>Preparation for assignment</b>
<b>Assignment 1: Monitoring Airport Passenger Terminal Service Standards (P1, P2, P3, P4)</b>
<b>Feedback on assignment</b>
Discussion on passenger flows and production of five flow charts.
Tutor input on the different types of disruption to service involving several different case studies.
Discussion and desktop role play on managing passenger flows.
Tutor input, discussion and investigation into managing major events.
Workshop to research Assignment 2.
<b>Preparation for assignment</b>
<b>Assignment 2: Coordinating and Managing Passenger Flows at Airports (P5, P6, P7, M1)</b>
<b>Feedback on assignment</b>
Tutor input and learner research on auditing and measuring airport facilities.
Guest speaker working in airport planning.
Tutor input on passenger demand forecasting.
Research into government air passenger demand forecasts and discussion on the findings
Producing a passenger demand forecast based on historic CAA data.
Tutor-led discussion on subjecting forecasts to sensitivity testing and a practical session on producing high, medium and low forecasts.

Topic and suggested assignments/activities and/assessment
Tutor input and learner research into the planning processes.
Tutor input, discussion and learner research into analysing the processes involved in the construction of a new airport passenger terminal.
Tutor input, discussion and research into what went wrong on the opening of a new airport passenger terminal.
Workshop to research Assignment 3.
<b>Preparation for assignment</b>
<b>Assignment 3: The Airport Planning Process</b> (P8, P9, P10, M2, D1)
<b>Feedback on assignment</b>
Review of the unit.

## Assessment

A variety of assessment methods could be used for this unit, although learning outcome 1 is ideally suited to a presentation (group or individual). The suggested assignment for learning outcome 2 is a newspaper article, but it could be undertaken as a desktop role-play exercise.

### P1 – P2 – P3 – P4

To achieve P1, learners will need to identify the different types of airport passenger terminal, learners will need to do this in relation to UK airports. For example, major airports predominantly have more than one passenger terminal, learners will need to research these terminals to determine the type of passengers or airlines that use them. The stages of development can be identified generically, but learners will be expected to pick out one UK airport and comment on its various stages of development. It is not sufficient to state that a particular passenger terminal is outdated or new; learners must identify and be mindful that the passenger terminal may be in several stages of development. For example, the check-in hall is new as it was constructed last year but the baggage reclaim has not been extended since the early 1990s and is not large enough to deal with current levels of traffic.

For P2 and P3, learners will need to outline airline and airport passenger service standards in relation to airport terminal operations. P4 is achieved by describing how these service standards are monitored. Learners must be mindful that terminal management acts as part of a system and all airport users and tenants are involved in the monitoring and reporting process.

### P5 – P6 – P7 – M1

P5 is achieved by determining the main flows through an airport passenger terminal that learners are familiar with from kerbside to aircraft boarding and vice versa. This will need to be carried out in relation to the five main passenger flows, reference should be made to passengers outside the major flows if the chosen airport has these passengers in significant numbers, for example common travel area passengers. This could be achieved by the production of a series of flowcharts, with explanations of what happens at each stage. Coordination of the flows can then be explained with reference to the flowcharts.

To achieve P6, learners will need to discuss possible disruptions in the passenger flows and their impact. All the disruptions listed and their impact must be covered. The impact on terminal management is congestion and learners need to discuss this in relation to one, several or all flights. Learners will need to explain how passenger flows are managed during disruptions to achieve P7. As with P6, learners need to explain this in relation to scenarios of one, several or all flights.

M1 requires learners to draw together P1 through to P7 and consider how a major event might be managed. This can be in relation to an event lasting several weeks such as the 2012 London Olympics on the operation at LHR or a more localised event lasting a day or more; if choosing a local event it must be one that has a significant impact on the airport and its environment. The event can be fictitious, but must be realistic, for example a Formula 1 race at Donington Park would have a significant impact on East Midlands Airport.

### **P8 – P9 – P10 – M2 – D1**

To achieve P8, learners will need to audit and measure current facilities. Auditing facilities is straightforward, but it is accepted that due to lack of information measuring current facilities and services accurately will be impossible and this only needs to be done in a simplistic fashion. The important factor is that learners understand that this is the starting point in the planning process and they appreciate its importance.

P9 will need to be approached in a similar fashion to P8. Learners need to know the factors that are taken into account in the production of passenger demand forecasts, undertake a 10–20 year forecast for their local airport by extrapolating forward historic passenger growth rates, explain the factors that might impact on that forecast, adapt their forecast to include a high, medium and low option and explain the assumptions that lie below their three passenger demand forecasts.

P10 is achieved by outlining the planning processes that have to be taken into account in the building of new facilities and services. Learners can look at this in relation to a building project at their local airport. Learners should cover all the items listed in the unit content.

M2 draws together P8, P9 and P10 by asking learners to analyse the processes involved in the construction of a new airport passenger terminal. The processes are listed in the unit content and the delivery guidance; learners can analyse these in relation to an actual, proposed or fictitious terminal.

D1 brings the unit together and to a conclusion by asking learners to assess the difficulties encountered when opening a new airport terminal and consider how it might have been managed differently making recommendations for improvements. The opening of Terminal 5 at London Heathrow (LHR) in 2008 would be an ideal choice given the amount of information available that documents the problems encountered during the first few weeks, but learners are free to choose any new airport passenger terminal in the UK.

## Programme of suggested assignments

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

Criteria covered	Assignment title	Scenario	Assessment method
P1, P2, P3, P4	Assignment 1: Monitoring Airport Passenger Terminal Service Standards	You are an assistant terminal manager and are tasked with improving service standards; make observations and write a report.	Presentation
P5, P6, P7, M1	Assignment 2: Coordinating and Managing Passenger Flows at Airports	You are an assistant terminal manager and are tasked with exploring passenger flows through the terminal; write an article on the coordination and management of airport passenger terminal flows.	Newspaper article
P8, P9, P10, M2, D1	Assignment 3: The Airport Planning Process	You are an assistant terminal manager and are tasked with up-dating colleagues on the airport planning process; write a presentation to update colleagues on the airport planning process.	Presentation

## 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 7: Customer Service in the Aviation Industry Unit 17: Environmental Impacts of Aviation Unit 19: Handling Air Passengers	Unit 18: Researching Current Issues in Aviation

## Essential resources

Learners must have access to published resources and the internet.

## Employer engagement and vocational contexts

It would be beneficial for learners to visit an airport terminal and to listen to and question staff directly involved in terminal management and airport planning.

## Indicative reading for learners

### Textbooks

Ashford N, Coutu P and Beasley J – *Airport Operations, 3rd Edition* (McGraw-Hill, 2012)  
ISBN 978-0071775847

De Neufville R and Odini A – *Airport Systems: Planning, Design and Management* (McGraw-Hill, 2002)  
ISBN 978-0071384773

Horonjeff R, Mckelvey F, Sproule W and Young S – *Planning and Design of Airports, 5th Edition* (McGraw-Hill, 2010) ISBN 978-0071446419

Kazda A and Caves R – *Airport Design and Operation* (Elsevier, 2007) ISBN 978-0080451046

Wells A and Young S – *Airport Planning and Management, 6th Edition* (McGraw-Hill, 2011)  
ISBN 978-0071750240

### Journal

*Flight International* – Reed Business Publishing

### Websites

[www.airports.org](http://www.airports.org)

International Airport Council

[www.aoa.org.uk](http://www.aoa.org.uk)

Airport Operators Association (AOA)

[www.baa.com](http://www.baa.com)

BAA Airports – airport operator

[www.caa.co.uk](http://www.caa.co.uk)

Civil Aviation Authority – UK aviation regulator

[www.icao.int](http://www.icao.int)

International Civil Aviation Organization

## Delivery of personal, learning and thinking skills

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

Skill	When learners are ...
<b>Independent enquirers</b>	exploring how passenger flows are co-ordinated, disrupted and managed at airport terminals.

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

Skill	When learners are ...
<b>Independent enquirers</b>	taking part in a study visit to observe passenger terminal management
<b>Self-managers</b>	ensuring vital information is gathered during a study visit to an airport terminal in order to meet the requirements of the unit assessment
<b>Effective participators</b>	discussing the importance of airport planning.

## ● 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	exploring the airport planning processes and how demand is forecasted
Use ICT to effectively plan work and evaluate the effectiveness of the ICT system they have used	illustrating how passenger flows are co-ordinated and managed using a range of ICT systems
Manage information storage to enable efficient retrieval	saving ongoing work in order to retrieve and develop
Follow and understand the need for safety and security practices	logging in to a variety of systems securely and visiting trusted websites
Troubleshoot	as required
<b>ICT — Find and select information</b>	
Select and use a variety of sources of information independently for a complex task	exploring different types of airport terminals
Access, search for, select and use ICT-based information and evaluate its fitness for purpose	using appropriate search criteria to investigate the airport planning process
<b>ICT — Develop, present and communicate information</b>	
Enter, develop and format information independently to suit its meaning and purpose including: <ul style="list-style-type: none"> <li>• text and tables</li> <li>• images</li> <li>• numbers</li> <li>• records</li> </ul>	entering and developing images, diagrams and text to explain how passenger flows are co-ordinated
Bring together information to suit content and purpose	collating observation notes, images and own ideas to discuss disruptions to passenger flows
Present information in ways that are fit for purpose and audience	presenting information on passenger flows clearly and logically to terminal management staff
Evaluate the selection and use of ICT tools and facilities used to present information	selecting the most appropriate ICT tools to display how passenger flows are co-ordinated, disrupted and managed
Select and use ICT to communicate and exchange information safely, responsibly and effectively including storage of messages and contact lists	sharing images and information about airports with colleagues and tutor paying attention to confidentiality issues

Skill	When learners are ...
<b>Mathematics</b>	
Understand routine and non-routine problems in a wide range of familiar and unfamiliar contexts and situations	estimating passenger growth rates taking into account different factors to adapt the forecast to a high, medium and low option.
Identify the situation or problem and the mathematical methods needed to tackle it	
Select and apply a range of skills to find solutions	
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	
<b>English</b>	
Speaking and listening – make a range of contributions to discussions and make effective presentations in a wide range of contexts	discussing airport and airline service standards in the context of terminal management
Reading – compare, select, read and understand texts and use them to gather information, ideas, arguments and opinions	reading documentation in relation to airport planning processes
Writing – write documents, including extended writing pieces, communicating information, ideas and opinions, effectively and persuasively	writing reports on service standards and passenger flows within airport terminals.