

Unit 3: Security in the Aviation Industry

Unit code:	Y/602/5676
QCF Level 3:	BTEC National
Credit value:	4
Guided learning hours:	30

● Aim and purpose

The aim of this unit is for learners to gain knowledge and understanding of the importance, maintenance, implementation and regulation of security within the aviation industry.

● Unit introduction

Aviation security can be viewed in many ways – it can be an inconvenience to the travelling public or a vital tool in the prevention of terrorist incidents; it is implemented by highly visible personnel, some of whom may be armed, or it uses covert stealth and intelligence tactics to succeed. Whichever way you look at it, aviation security is a fact of life and is here to stay. How successful it is in achieving its stated aims of protecting human life, company assets and business integrity largely depends on how it is carried out.

Aviation is a high-profile global industry that remains an attractive target for individuals or groups wishing to publicise their grievances and who seem to have no regard for death and injury caused by a terrorist attack. The nature of the threat to aviation security is constantly changing, so it is essential that security agencies operate within a coordinated domestic and international network to share intelligence and develop a unified strategy to stay one step ahead.

Less frequently in the headlines, but also of significance, is the requirement to protect the aviation industry from more conventional threats such as theft and fraud. Security services help to ensure that millions of passenger bags and hundreds of thousands of tonnes of air cargo are not interfered with while in the airport environment.

In this unit learners will discover how aviation security is implemented and regulated within the UK, as well as how responses to the ever-changing threat of terrorism are harmonised and improved.

● Learning outcomes

On completion of this unit a learner should:

- 1 Understand the importance of security in the aviation industry
- 2 Understand how security is regulated in the aviation industry
- 3 Understand how security systems and procedures are implemented and co-ordinated in the aviation industry
- 4 Understand how systems and procedures are used to monitor, control and improve aviation security.

Unit content

1 Understand the importance of security in the aviation industry

Security incidents:

- buildings and airspace, e.g. unauthorised persons airside, unauthorised articles found within passenger baggage, bomb threat, unattended baggage within the terminal, unauthorised flying of drones in airspace
- aircraft, e.g. hijack, suspicious package found during turnround/in-flight, inbound flight with hijackers/suspected bomb on board
- passengers and staff, e.g. violence towards staff/passengers in the terminal and towards aircrew/passengers on board, theft from baggage, stolen baggage, unauthorised staff, misuse of passports/tickets

Importance of maintaining a secure environment:

- legal, e.g. duty of care, liability, threat of prosecution
- public image, e.g. maintain public confidence and trust, maintain industry confidence, avoid negative publicity, protect the business
- prevention, e.g. removal of opportunities for security breaches, high-profile security systems, protection of the travelling public, counter drone technology, exclusion zone, response to threat levels, e.g. additional measures put in place in case the threat level rises.

2 Understand how security is regulated in the aviation industry

Security regulation and legislation:

- laws, e.g. current health and safety regulations in relation to: aviation and maritime security legislation, anti terrorism, crime and security legislation, policing and crime legislation, air navigation order legislation.
- local airport regulations and bylaws
- company regulations

Responsibilities of supervisors and employees:

- supervisors, e.g. fulfil all legal requirements, conduct background checks, ensure Disclosure and Barring Service (DBS) checks are complete, investigate suspected breaches, discipline offenders, report known breaches to security authorities
- employees, e.g. follow security instructions, cooperate with security staff, wear pass when on duty, report any suspected security breaches immediately, take personal responsibility for reporting security issues, remain vigilant at all times

Role of regulatory bodies and organisations:

- Home Office (police and anti-terrorism legislation)
- Department for Transport (DfT – TRANSEC) (airport security legislation)
- CAA compliance with air navigation order legislation
- International Civil Aviation Organization (ICAO) (global coordination)

- airport authority, e.g. security staff, provision of accommodation/facilities
- local authority, e.g. provision of local police
- airlines/handling agents/concessionaires, e.g. vetting staff, compliance with current regulations, reporting suspect staff
- role, e.g. legal responsibility, enforcement, coordination

3 Understand how security systems and procedures are implemented and co-ordinated in the aviation industry

Implementation and coordination of security systems:

- check-in, e.g. matching e-ticket with photo ID, scanning hold baggage, AAA baggage accounting/authorising system, observing unusual behaviour or travel patterns
- security screening, e.g. passenger boarding card check, staff pass check, archway metal detector (AMD), pat down, body scan, explosive detection, liquids restrictions
- boarding, e.g. cross-check boarding card/photo ID, verify headcount, verify passenger total matches AAA record, remove any unaccompanied bags from aircraft
- airport, e.g. CCTV, uniformed and plain clothes security, radio system to request assistance

Procedures for minor security incidents and major emergencies:

- minor security incidents on the ground or in the air, e.g. unattended baggage, missing passenger at boarding gate, lost boarding card, bag total does not tally with AAA, passenger count does not tally with manifest
- minor security procedures, e.g. advise security of unattended bag, attempt to reunite with owner, broadcast boarding calls to alert missing passenger, contact check-in supervisor to verify passenger with missing boarding card, cancel original boarding card then reissue, re-count bags, conduct a baggage ID check, offload any unaccompanied bags from aircraft
- major security incidents on the ground or in the air, e.g. bomb threat, violent passenger, weapon found in passenger bag
- major security procedures, e.g. isolate area, advise police/bomb squad, do not allow passengers/staff into area until declared safe, identify violent passenger to police, withdraw staff from confrontational situation, deny boarding to the passenger, security staff confiscate bag with weapon, detain passenger, advise police, deny boarding to passenger

Coordination required in the event of a security breach:

- agencies, e.g. airline staff, cabin crew, contract security, police, Special Branch, bomb squad, airport authority
- coordination, e.g. follow standard procedures, ensure accurate information passed to all appropriate agencies, avoid duplication, avoid omissions, avoid confusion, ensure standard response to incident
- coordinated review of actions taken after the incident

4 Understand how systems and procedures are used to monitor, control and improve aviation security

Systems and procedures used to monitor, control and improve security:

- monitor, e.g. surveillance, CCTV (all areas), number plate recognition (car park), staff ID checks, passenger ID checks, overt security staff, covert security staff

- control, e.g. restricted access, restricted zone, limited access points, electronic interrogation of passes, movement monitoring of pass holders, perimeter checks
- use of intelligence, e.g. from international or domestic security agencies, collated by Home Office/DfT, standard response from all UK airports
- improve, e.g. security systems audited, DfT officer attempting to breach security, taking a weapon through screening, checking training records
- equipment used must be approved by DfT

Implementation of procedures:

- information from central source, e.g. Home Office, DfT
- changes passed to airport security agencies, e.g. police, Special Branch, contract security, airport authority
- essential information passed to individual security officers
- officers monitored to ensure compliance
- introduction of biometric passports, passport scanners, face recognition

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:
<p>P1 Describe different types of security incidents that can occur relating to buildings, aircraft, passengers and staff</p> <p>P2 Explain the importance of maintaining a secure environment in aviation [IE]</p> <p>P3 Summarise security regulations and legislation</p> <p>P4 Outline the responsibilities of supervisors and employees in complying with security regulations and legislation</p> <p>P5 Explain the role of the regulatory bodies and organisations involved in aviation security [IE]</p> <p>P6 Explain how aviation security systems and procedures are implemented and co-ordinated [IE]</p> <p>P7 Explain how procedures are implemented when dealing with both minor security incidents and major emergency situations</p> <p>P8 Explain the co-ordination required with security agencies in the event of a breach of aviation security</p>	<p>M1 Explain how security breaches have occurred</p> <p>M2 Analyse the consequences of non-compliance with security systems and procedures in the aviation industry</p>	<p>D1 Discuss the involvement of security organisations, regulatory bodies, systems and procedures prior to, during and after a security incident</p>

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:
P9 Describe systems and procedures used to monitor, control and improve aviation security		
P10 Explain how systems and procedures to monitor, control and improve aviation security are implemented		

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 CT – creative thinkers	RL – reflective learners TW – team workers	SM – self-managers EP – effective participators
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Essential guidance for tutors

Delivery

It is expected that many learners will have been through an airport as a traveller and will, as such, have been on the receiving end of security checks. Undoubtedly there will be some good and bad experiences that can be shared. These experiences can be contextualised and the group encouraged to explore why a belt or a pair of shoes had to be removed, why a bottle of water was confiscated or why a child's toy gun was regarded as a prohibited item. Tutors should encourage learners to consider security in the air as well as on the ground. Throughout the unit content, reference is made to both on the ground security as well as in the air, although for assessment purposes learners do not have to provide evidence of both.

Visiting an airport to study the security screening area might not be possible, but if a flight could be arranged as part of the course, and learners were guided as to what they should be looking out for during the security process, the experience would be rewarding and informative. After the flight, learners could identify and discuss the systems and procedures used to screen them from check-in through to embarkation, on-board and through disembarkation. Differences between the originating airport and the destination airport could be compared and discussed. Organising a flight for learners would be beneficial for other units within the programme for example *Unit 19: Handling Air Passengers*, *Unit 21: Aircraft Dispatch*. Even a one-day return flight to another UK destination or a destination on the near continent would suffice and can be inexpensive if centres can take advantage of low-cost promotional flights from low-cost airlines. For example, a flight to Belfast, Dublin or Amsterdam from Manchester, Newcastle, Luton or Bristol could be inexpensive.

When delivering the unit content from learning outcomes, it is important to introduce real-life contexts of the subject matter to discussions. For example, learning outcome 1 examines why security is important and there are numerous newspaper and journal articles, together with video clips, that show what can happen when security is ineffective (for example London Gatwick Airport drone incident, December 19th - 21st 2018).

Learning outcome 2 looks at regulators and legislation. Learners should be made aware that aviation security is not just a local issue. Problems of terrorism exist worldwide and often the threat comes from overseas. As a result the ICAO coordinates a global response to these issues. Its recommendations, together with shared intelligence, frequently become the basis of changes to rules and regulations. Building on the examples learners have researched the role of the regulators can be explored. This can continue to include the responsibilities of both supervisory staff and the general workforce in the airport. Learners should be made aware that security breaches do occur and they should be given the opportunity to research and discuss how security breaches have happened.

Security systems may not be familiar to learners and tutors may need to guide learners with their research into these. One element that may have to be tutor led is the reasons behind and the methods used to coordinate the systems. This should include an explanation of how the multi-layered security systems in place at all airports are coordinated to allow efficient movement of bona fide passengers and baggage while preventing unauthorised personnel or prohibited items from gaining access airside. A table-top exercise could be used to discover how learners would expect security agencies to respond to selected minor and major incidents. The exercise could be completed by a discussion of the level and type of coordination between agencies to ensure an appropriate and robust response. If role play is utilised, video evidence can be used for evaluation and discussion.

A guest speaker, familiar with current security systems, regulations and procedures would be best placed to deliver the content for learning outcome 4. As the range of systems is constantly evolving, it is important to ensure that topics are up to date and relevant. Items in the unit content should be considered as a guide, not a definitive list.

Throughout the unit, learners should be encouraged to discuss the involvement of security organisations, regulatory bodies, systems and procedures prior to, during and after a major security breach. They should be given the opportunity to understand and comment on previous and current practice referring to examples of real-life situations and case studies. Videos and documentaries about major security incidents will add to the learning experience and will help learners to achieve the 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.</p> <p>Working in small groups to define security.</p> <p>Brain storming session to determine why security is so important in the aviation industry.</p> <p>Airport visit where possible, with an opportunity to experience a flight and gain first-hand knowledge of the security processes for both departing and arriving passengers.</p> <p>After the flight learners could discuss the systems and procedures that they have witnessed from check-in through to embarkation, on-board and through disembarkation.</p> <p>Compare the systems and procedures at both airports.</p>
<p>Introduction to Assignment 1.</p> <p>Newspaper articles and journals used to explore why security is so important.</p> <p>Video clips to show what happens when security is ineffective (e.g. London Gatwick Airport drone incident 19th - 21st December 2018).</p> <p>Group discussion to determine the types of incident that can occur within the terminal and also in the air.</p> <p>Discussion – Is aviation security just a local issue?</p> <p>Case study exercise to determine the importance of maintaining a secure environment, including legal, public image and prevention.</p> <p>Discussion to analyse the restrictions on the carriage of liquids.</p> <p>Paper-based exercise to summarise security regulations and legislation and identify the responsibilities of supervisors and employees in complying with security regulations and legislation.</p> <p>Small-group discussions – How do security incidents occur?</p>
<p>Preparation for assignment</p> <p>Assignment 1: Security in the Aviation Industry (P1, P2, P3, P4, P5, M1)</p> <p>Feedback on assignment</p>

Topic and suggested assignments/activities and/assessment

Introduction to Assignment 2.

Tutor-led presentation on the different types of security systems used within the aviation industry.

Research activity for learners to extend their knowledge of security systems.

Guest speaker to describe how aviation security systems and procedures are implemented and coordinated, and the reasons why certain methods of coordination are used. Guest speaker will also be able to inform learners of current security systems, regulations and procedures.

Table-top exercise to understand how security agencies respond to selected minor and major incidents.

Discussion of the level and type of coordination between agencies to ensure an appropriate and robust response.

Role play for learners to demonstrate the use of security systems.

Preparation for assignment

Assignment 2: Maintaining and Improving Aviation Security (P6, P7, P8, P9, P10, M2)

Feedback on assignment

Introduction to Assignment 3.

Discuss the involvement of security organisations, regulatory bodies, systems and procedures prior to, during and after a major security breach. These discussions should be encouraged throughout delivery of the whole unit.

Videos and documentaries to understand and comment on previous and current practice referring to examples of real-life situations and case studies.

Preparation for assignment

Assignment 3: Investigation into an Aviation Security Incident (D1)

Feedback on assignment

Assessment

A variety of assessment methods could be used including written, practical and role play. It is recommended that more than one assessment method is used to cater for different learning styles within a 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 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 – P3 – P4 – P5 – M1

To achieve P1, learners must describe the types of security incident that can realistically be expected to occur within an airport and on an aircraft in relation to both passengers and staff. Learners should describe two incidents within the terminal and two incidents on an aircraft.

To achieve P2, learners must explain the importance of maintaining a secure environment within the aviation industry, ensuring that examples of legal, public image and prevention (as listed in the unit content) are addressed. This can be written (or presented) in conjunction with P1.

To achieve P3, learners must summarise the most important security regulations and legislation affecting aviation security referring to the unit content. Some local regulations not listed may be included. This could be integrated with P5.

To achieve P4, learners must produce an outline of the responsibilities of supervisors and general airport workers in complying with the legislation and regulations identified in P3. Some of the examples listed in the unit content should be addressed within the evidence.

To achieve P5, learners must briefly explain the key role of regulatory bodies and other organisations involved with security within the aviation industry. This may be produced in conjunction with P3.

To achieve M1, learners must explain how security breaches have occurred. It would be beneficial for learners to use real-life scenarios in their explanation, perhaps using those provided by guest speakers. For example, learners could look at how an unauthorised person could gain access to airside or how unauthorised articles have been found within passenger baggage.

P6 – P7 – P8 – P9 – P10 – M2

To achieve P6, learners must explain how aviation security systems are implemented and coordinated. They should cover the following functional areas: check-in, security screening, boarding, and generally within the airport. Learners should include the sharing of information and a unified approach to aviation security within their evidence.

To achieve P7, learners must explain how procedures are implemented when agencies are faced with two minor and two major security incidents. Evidence could be based on role play. In each case, a brief description of the incident must be followed by a detailed explanation of the responses.

To achieve P8, learners must explain the type of coordination required between security agencies following a breach in security. Learners can choose to link their evidence to one of the major incidents covered in P7.

P6, P7 and P8 could be assessed together within a set of role play activities. If this method of assessment is used then a detailed witness statement must be produced, signed by both the learner and the assessor. Internal verification of a sample of learners can take place at the same time as performance.

To achieve P9, learners must describe systems and procedures used to monitor, control and improve aviation security. Learners should include one system for each sub-section of the content (monitor, control, use of intelligence, improve, equipment used).

To achieve P10, learners must explain how the systems described in P9 are implemented and include all items listed in the unit content. Evidence may be produced in conjunction with P9.

To achieve M2, learners must analyse the consequences of non-compliance with security systems and procedures within the aviation industry. Learners can use examples from case studies or real-life situations to support their analysis. The examples provided should cover a range of different types of security non-compliance situations. For example, the consequences of hold baggage not being scanned correctly, or the consequences of restricted areas not being monitored correctly.

D1

To meet D1, learners must discuss the involvement of security organisations, regulatory bodies, systems and procedures prior to, during and after a security incident. This can be achieved by focusing on one particular incident. Tutors should guide learners to focus on an incident that covers all aspects of the unit so they can demonstrate an understanding of all the learning outcomes. To achieve this, case studies or real-life scenarios can be used. Learners could focus on a real-life scenario that has occurred within the last five years.

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, P3, P4, P5, M1	Assignment 1: Security in the Aviation Industry	Working for a security company at a busy UK airport. You will be giving a talk to new employees on the importance of security in the aviation industry and security regulations.	Presentation
P6, P7, P8, P9, P10, M2	Assignment 2: Maintaining and Improving Aviation Security	Working for a security company at a busy UK airport. You have been asked to give a presentation about the implementation of security systems and how they are used to monitor, control and improve aviation security.	Role play Presentation
D1	Assignment 3: Investigation into an Aviation Security Incident	Working for a security company at a busy UK airport. You have been asked to write a detailed report about the involvement of security organisations, regulatory bodies, systems and procedures prior to, during and after a security incident.	Written or verbal discussion

Links to other BTEC units

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

Level 2	Level 3	Level 4
Unit 23: Aviation Communications	Unit 1: The UK Aviation Industry Unit 2: Health and Safety in the Aviation Industry Unit 20: Ramp Handling Unit 21: Aircraft Dispatch	n/a

Essential resources

Learners must have access to library and research facilities, including current trade publications. Learners should have access to accurate and up-to-date industry case studies.

Employer engagement and vocational contexts

It would be beneficial for learners to experience checking in and going on a flight to experience the security procedures during a group visit or residential. Due to strict security procedures within airports it would otherwise be hard to gain airside access to an airport. However, as a paying passenger learners would be able to experience the routine security that is conducted at all airports. To accompany this, guest speakers within the classroom environment would extend learner knowledge through discussion of real-life scenarios.

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	conducting research to gain an understanding of systems and procedures within aviation security.

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 ...
Team workers	participating in group activities and tasks
Self-managers	managing own workload and time
Effective participators	participating in group discussions and tasks.

● 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	delivering a presentation on the implementation of security systems and how they are used to monitor, control and improve aviation security
Use ICT to effectively plan work and evaluate the effectiveness of the ICT system they have used	delivering a presentation on the implementation of security systems and how they are used to monitor, control and improve aviation security
Manage information storage to enable efficient retrieval	delivering a presentation on the implementation of security systems and how they are used to monitor, control and improve aviation security
Follow and understand the need for safety and security practices	ongoing
Troubleshoot	as required.
ICT — Find and select information	
Select and use a variety of sources of information independently for a complex task	researching security systems and procedures within aviation
Access, search for, select and use ICT-based information and evaluate its fitness for purpose	delivering a presentation on the implementation of security systems and how they are used to monitor, control and improve aviation security.
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 	delivering a presentation on the implementation of security systems and how they are used to monitor, control and improve aviation security
Present information in ways that are fit for purpose and audience	delivering a presentation on the implementation of security systems and how they are used to monitor, control and improve aviation security
Evaluate the selection and use of ICT tools and facilities used to present information	delivering a presentation on the implementation of security systems and how they are used to monitor, control and improve aviation security.

Skill	When learners are ...
English	
Speaking and listening – make a range of contributions to discussions and make effective presentations in a wide range of contexts	giving a talk to new employees on the importance of security in the aviation industry and security regulations
Reading – compare, select, read and understand texts and use them to gather information, ideas, arguments and opinions	giving a talk to new employees on the importance of security in the aviation industry and security regulations
Writing – write documents, including extended writing pieces, communicating information, ideas and opinions, effectively and persuasively	writing a detailed report about the involvement of security organisations, regulatory bodies, systems and procedures prior to, during and after a security incident.