



# Aviation

E N G L I S H

For ICAO compliance

**John Kennedy**

TEACHER'S BOOK

  
MACMILLAN



# CONTENTS

UNIT	TITLE	PAGE
	Introduction	4
1	Runway incursion	8
2	Lost	18
3	Technology	28
4	Animals	38
5	Gravity	48
6	Health	58
7	Fire	68
8	Meteorology	78
9	Landings	88
10	Fuel	98
11	Pressure	108
12	Security	118





# INTRODUCTION

This book has been written to support the teaching of the course book, *Aviation English*. Air traffic controllers and pilots who attend English courses have the same language needs as any other students who wish to improve their English for professional purposes. They are not attending English courses to learn the technical vocabulary they need for their jobs, but rather to improve their general ability to communicate on work-related matters in English.

You may have limited or no experience in the teaching of English for civil aviation. If so, this Teacher's Book has been written to help you. There are comprehensive explanations for non-specialists of the issues and the particular situations which air traffic controllers and pilots have to deal with. Detailed teaching notes are also provided for each unit. The Teacher's Book therefore has a dual function. To provide background information and explanations on aviation contexts and to provide some suggestions as to how to teach the material most effectively.

## Language skills for pilots and controllers

English language training of pilots and controllers focuses almost exclusively on improving their listening and speaking skills. Effective verbal communication is essential to ensuring safety in civil aviation. Communications are voice only, that is controllers and pilots talk to each other at a distance, through radiotelephony communications. The verbal message is the only communication tool at their disposal (though basic routine messages are sometimes exchanged electronically).

A certain degree of **fluency** is required because controllers have to communicate with several aircraft at the same time and they cannot wait for an unreasonably long time for a pilot to pass a message. Pilots need to receive information and instructions in good time to react accordingly. The **interaction** between pilots and controllers must be effective, as both parties need to be able to check, confirm and clarify when misunderstandings occur. Controllers and pilots require sufficient **vocabulary** to be able to communicate in both the routine and non-routine situations which may occur in their jobs. In addition, controllers and pilots need to have a good command of basic **grammatical structures** so that they can communicate information in a format which will be understood by their interlocutor. And finally, **pronunciation** needs to be sufficiently clear and intelligible to the international aviation community.

The five features highlighted above (fluency, interaction, vocabulary, structure and pronunciation) are the criteria which appear on the ICAO (International Civil Aviation Organization) language proficiency scale. The sixth and final feature to be assessed on the scale, which is also of fundamental importance, is **comprehension**. Controllers and pilots must be able to clearly understand their interlocutor in routine everyday situations, and where an unusual or an unexpected situation might cause confusion, they must have clarification strategies available.

The communication skills of both controllers and pilots are evaluated according to this ICAO scale, with six different descriptors for each of the six features mentioned above. The levels are defined as follows:

- Level 6 Expert
- Level 5 Extended
- Level 4 Operational
- Levels 1–3 Non-operational



Controllers and pilots learn to communicate in what is termed **standard phraseology** during their basic training, and they put it into practice on a daily basis. This phraseology is sufficient to communicate at least 95% of what pilots and controllers need to say. It consists of simple clear messages designed for routine situations. There is an absence of grammar, prepositions, complexity, words that are difficult to pronounce, words with ambiguous meanings, etc. The manual on standard phraseology can be simply memorized. Through repetition on a daily basis, controllers and pilots can become highly proficient in their use of phraseology. They can use and understand phraseology without necessarily being able to speak or understand English.

The problem is that a good knowledge of phraseology, which is appropriate for exchanging expected routine messages, is not sufficient to deal with a non-routine situation. A non-routine situation may also be an emergency situation, or have the potential to develop into an emergency situation.

The only way that pilots and controllers can be sure to be able to communicate in a non-routine situation is if they both have a sufficient level of proficiency in a common language. For the international aviation community, this language is English. Due to this need to communicate in unexpected situations, ICAO now requires all controllers and pilots to demonstrate a minimum of level 4 on their six-point language proficiency rating scale. The descriptors of level 4 measure the ability to communicate in what the ICAO terms **plain language**, in order to make a clear contrast with the phraseology suitable for routine situations.

*Aviation English* focuses on plain language throughout. A brief look at the contents page and the topics included in the book will give you an idea as to what topics your students need to be able to talk about.

In many other professions, students have the opportunity to use and indeed develop their English at work every day. If one considers that phraseology is 'not really English', and that neither controllers nor pilots deal with non-routine situations regularly (nor would we want them to), then we can see that pilots and controllers do not communicate in plain English on a daily basis. This together with the potentially serious consequences of any misunderstanding which might occur when they do need to use plain English, provide two important justifications for English language training for controllers and pilots.

Many controllers and pilots need the opportunity to improve and practise their English in a language classroom, guided by a teacher, and they need suitable materials to aid them in doing so.

## The aviation English teacher

The first and most important point to make is that an aviation English teacher cannot and is not expected to be an expert in aviation. Of course, it helps to have a general knowledge of how airports, aircraft and airlines operate, as well as having some idea as to what the jobs of air traffic controller and pilot involve. Assuming you have flown before as a passenger, then you will already have some ideas before meeting your students.

Students will want to learn about and discuss situations which are relevant to their jobs, but they are unlikely to ask you any questions of a technical nature. They know where they can find the answers themselves to such technical questions. Indeed you will probably find that you can ask your students questions about their work, about the procedures followed and about why things are done in a particular way. They, as experts in their own field, will be able to provide answers which you, as an expert English teacher, can help them formulate in English. They may derive some satisfaction from the fact that they are teaching you just as you are teaching them.

Perhaps the most important attribute you need to become an effective aviation English teacher is an enthusiasm for and a general interest in aviation. This, coupled with a desire to learn more, is likely to be appreciated by your students.

## Components of the *Aviation English* Teacher's Book

Each unit begins with a two-page introduction to the unit topic. The introduction has been written for the teacher who has little or no knowledge of civil aviation and explains key terms which appear in the unit. It is a good idea to read the introduction before you look at the material to be taught in the Student's Book. The introduction also features the section *For fun ...* which presents a joke relevant to the unit topic that you could share with your students.

Detailed teaching notes are then provided for the activities to be found in the Student's Book, as well as answer keys and listening scripts.

The teaching notes include suggested warmers, extension activities, suggestions as to alternative ways to set up certain activities and some general advice and teaching tips.

At the end of each unit there is a one-page photocopiable activity which you could use if you have sufficient time available.

## Organization of the *Aviation English* Student's Book

Section 1 of each unit introduces the theme of the unit, usually through a reading text and a separate presentation of the basic vocabulary needed to talk about the topic. Section 2 contains a detailed listening activity. As well as comprehension activities, language functions and pronunciation skills are also taught (note that these sometimes appear in Sections 1 and 3 as well). The main focus of Section 3 is a non-routine situation (or incident), in which students listen to the communication between pilot(s) and controller(s) to find out how the situation develops and how it is finally resolved. Finally, Section 4 contains activities which practise the language functions and the vocabulary taught in the unit. These activities can be set as homework.

## General advice for using the *Aviation English* Student's Book

Let your students speak! The subjects to be found in the book will arouse their interest and there are frequent opportunities, built into the structure of each unit, for them to express their views on particular issues, or to role-play certain situations. Allow students to take full advantage of such activities. Speaking is of fundamental importance for both pilots and controllers.

Make full use of all the listening comprehension activities. Practising and improving comprehension is the other main goal for your students, and if their listening comprehension develops, improved speaking skills usually follow.

Support the efforts of your students to speak by drawing their attention to the vocabulary and the language functions contained in each unit. Be ready to supply your students with additional language as and when they require it.

Act as an interested interlocutor in class discussions. If you don't understand something, tell your students, as this gives them the chance to explain in English.

*Aviation English*, while designed to be taught in order from Unit 1 to Unit 12, is quite flexible. It will work equally well if you leave out certain units or change the order in which you approach them. If you are using this book for a short course, and you know that it won't be possible to complete all the material, you could ask students to choose the units which look most interesting to them.

Don't forget that although your students all work in civil aviation, they may have very different knowledge, experiences and ideas to share. Be ready to exploit this in the classroom by encouraging students to share experiences and to explain technical matters to each other.

## Recommended web sites

There are literally thousands of web sites providing useful and interesting information on civil aviation. The following are a small selection which might be of interest to you should you wish to further develop your knowledge of civil aviation.

You might also consider recommending one or more of these web sites to your students, for their own general interest, and also to encourage them to read and to listen to more aviation English outside the classroom.

Students may already be familiar with some of these sites, or they may have their own favourites, which they can then recommend to you and to each other.

As in any other English language course, the more things you encourage your students to do using English outside the classroom, the better!

### **[www.liveatc.net/feedindex.php?type=all](http://www.liveatc.net/feedindex.php?type=all)**

*LiveATC.net*: This is an excellent site if you wish to listen to some real air traffic control from different locations around the world. You can choose your geographical area at the top of the page and the locations which are marked in green are accessible. Most of what you listen to in this way is entirely routine, but the site also collects particularly interesting segments where 'something happened', though you need to join up to listen to these.

### **[www.pprune.com](http://www.pprune.com)**

*The Professional Pilots Rumour Network*: This site is an interesting exchange of news and views. As its name suggests, it's a site for pilots, but anyone concerned with aviation will find many interesting topics and stories to read about.

### **[www.virtualskies.arc.nasa.gov](http://www.virtualskies.arc.nasa.gov)**

*Virtual Skies*: This site is an excellent resource for the teacher who is new to the world of aviation. It is an educational site, set up by NASA education, designed for schools and featuring many of the subject areas included in this course book. Technical explanations are clear to follow and interesting interactive activities are included.

### **[www.nts.gov/ntsb/query.asp](http://www.nts.gov/ntsb/query.asp)**

*NTSB Aviation Accident Database & Synopses*: The NTSB (National Transportation Safety Board) is the body which investigates all aviation accidents in the US. They also investigate accidents abroad when a US registered aircraft is involved, or when their expertise is called upon. You can use their extensive database to research a particular accident or a type of accident. There is also a section dealing with incidents.

### **[www.faa.gov](http://www.faa.gov)**

*FAA (Federal Aviation Administration)*: The FAA is the civil aviation authority of the US. Their web site is extremely comprehensive and contains interesting and official information and statistics on a wide range of safety issues, amongst other things. This site is worth browsing or visiting when you have a particular subject to research.

### **[www.pilotfriend.com](http://www.pilotfriend.com)**

*Pilot resources and aviation weather for general aviation*: This heading on the home page is somewhat misleading as the site contains information on many issues. Amongst others, it's worth looking at the flight safety section, the aviation history section and the section on aviation humour.

### **[www.atwonline.com](http://www.atwonline.com)**

*ATW (Air Transport World) Daily News*: This is an excellent site for keeping up to date with the latest aviation news. You might wish to register for free daily news updates to your email address. You can advise your students to do likewise.

### **[www.aopa.org/pilot/never\\_again](http://www.aopa.org/pilot/never_again)**

*AOPA (Aircraft Owners and Pilots Association) Online*: This is another very comprehensive web site and the title reflects its content. You may wish to browse this site to see what could interest you or your students. The address above will take you directly to an extensive series of pilot stories, each entitled 'Never again'. These stories are all about an error of judgement on the part of a private pilot, which could have been fatal and the pilots explain what they learned from these experiences.



## Introduction

The first airports were simply grass fields (airfields) but as aircraft became heavier, paved **runways** were developed. This also meant that airplanes could land and take off in all weather conditions. Over the years airports have become bigger and busier with elaborate **terminal buildings** to improve passenger comfort and offer retail services. The world's biggest airport is now considered to be Atlanta, with Heathrow airport generally recognized as the world's biggest international airport, though it faces serious competition from Charles de Gaulle (Paris), Frankfurt and Schipol (Amsterdam). Not everyone agrees on the 'biggest' though, as an airport's size can be measured in terms of the number of **movements** (landings and take offs) that occur in a year, the number of passengers that pass through, the number of runways available or even the surface area occupied. The airport featured in Section 2 of the unit, JFK (New York), is another of the world's biggest and most famous.

Airports are sometimes referred to as **aerodromes**, though this term is considered old-fashioned and often implies a small airport. The term **airstrip** is used when not much more than a small basic runway is provided (often used by the military).

When talking about airports, 'big' is not always beautiful. In recent years there has been considerable controversy concerning the environmental impact of increasing traffic at large airports (see Unit 10). Noise pollution is a particularly controversial issue, and expanding existing airports or building new ones is becoming increasingly difficult in many parts of the world.

## Organization

Airports are divided into **landside** and **airside** areas.

Airside areas are where the airplanes can be found. These include **runways** and **taxiways**, as well as **stands**, where aircraft are parked for providing direct access to the terminal building through an **air bridge** or **jetway**. The airside area also includes the **apron**, where several aircraft may park at a distance from the terminal building (buses then take passengers to and from the aircraft).

Access to all airside areas is subject to tight security controls. Landside areas, on the other hand, which include shops, restaurants, car parks and check-in areas, are more accessible to the general public.

**Air Traffic Control** (ATC) is usually provided from a control tower situated on-site. At major airports ATC is separated into **ground control** (responsible for aircraft and all other vehicles using the apron and taxiways) and **tower control** (responsible for aircraft landing and taking off on the runways). **Approach control** handles aircraft which have just taken off or are about to land. **En-route** traffic is controlled at an area control centre, which can be situated anywhere, as the aircraft are only visible on a controller's radar screen.

## Runways

Small airports may have only one runway but most major airports have several. When a new airport is built or an existing one expanded, **runway layout** is of primary concern. Runways need to be laid out to make optimum use of the prevailing winds because aircraft need to take off and land directly into the wind if possible. Crosswinds can be a dangerous hazard. Assuming that the airport will be busy, the layout should also be efficient, ideally allowing runways to be used simultaneously. A further important consideration is the way in which local resident communities will be disturbed by noise. At the end of Section 2 in the unit, students are given the opportunity to design their own airport layout.

The three main runway configurations are **parallel** runways, **open-V** runways (they diverge but do not intersect, when viewed overhead the shape is a 'V'), and **intersecting** runways. The latter two types are relevant in locations where the direction of the prevailing wind changes.

Runways are labelled depending on their direction relative to the magnetic compass (to the nearest 10°, with the zero left off). This number is clearly indicated at the end of each runway. If a runway is labelled 09 at its starting point (**runway threshold**) because it runs due east (90°), then it will be labelled 27 at the other end which is the runway threshold should the pilot need to land in a westerly direction (270°). In this way, when a wind reverses direction, landings and take offs follow suit. All runways are thus designated by two numbers the difference between which is 18. For example, on runway 13-31 pilots can either land or take off with a heading of 130° or 310°.

At international airports all runways must have **ground markings** and **standardized lighting** according to agreed international standards. The threshold and direction of a runway should be clearly marked as well as the **touchdown zone** and **distance markers** at various points





to show a pilot how much runway is left. The centre line should also be clearly visible as well as the **runway exits** leading to taxiways. Standardized lighting is as follows:

- Green **threshold lights** mark the beginning of a runway.
- Red lights mark the end of a runway.
- White or yellow lights mark the edges of a runway.
- Blue lights indicate taxiways.

## Runway incursions

People often think that you are safe once you have landed on the runway and the pilot has slowed the aircraft down. In fact most accidents happen on the ground and not in the air. The world's worst ever civil aviation disaster (disregarding terrorist attacks) was the accident at Tenerife airport in 1977 when two Boeing 747s collided on a runway killing 583 people. As traffic increases at major airports, so do the risks of collisions on the ground.

A **runway incursion** is the unauthorized entry onto a runway by an aircraft, a vehicle, a person or an object. In such situations there is a serious danger to any airplane which may be taking off or landing. A clear illustration of this is the incident in Section 3 of the unit. A runway incursion might be caused by an operational error on the part of an air traffic controller, a pilot deviating from issued instructions or by the driver of an airport vehicle.

Miscommunication can be the cause or a key contributing factor in a runway incursion, as seen in the reading text in Section 1. Problems with the lighting or markings of runways or taxiways, or just a general disorientation or failure to see a situation correctly are other potential factors.

When a runway incursion occurs, there is often more than one factor at work. In 2001 at Milan's Linate airport, an MD-87 collided in fog on the runway with a Cessna corporate jet killing 118 people. The pilots of the corporate jet were unfamiliar with the airport and wrongly followed the instructions they were given, the air traffic controllers on duty failed to pick up clear signs that they were on the wrong course and though there was a **ground radar warning system** available at this frequently fogbound airport (which would have alerted all sides to the problem) it had not yet been installed (it has now).

for fun

### When a pilot gets nervous ...

**Beech Baron:** Uh, ATC, verify you want me to taxi in front of the 747.

**ATC:** Yeah, it's OK. He's not hungry.

*A Beech Baron is a small aircraft, usually with four seats, a 747 was, until very recently, the largest passenger aircraft. The initial instruction from air traffic control was quite normal. Taxiing behind a 747 could be very dangerous due to the jet blast from its engines.*





# RUNWAY INCURSION



## Section one – Avoiding miscommunication

This section deals with the important area of miscommunication between pilots and controllers. It introduces key vocabulary which relates to the routine messages exchanged between pilots and controllers for aircraft manoeuvring on the ground. It teaches the language function of asking for information and provides students with an opportunity to talk about the importance of English in their professional lives.

- 1** As air traffic increases and airports become more congested, ground operations at international airports are becoming more complex and this is an increasing area of difficulty for pilots and air traffic controllers (though the latter are at least familiar with their airport). As well as trying to taxi around an unfamiliar airport, a pilot may also have some difficulties communicating with the local controllers.

Students should have some interesting ideas to share on the two discussion questions. But, with regard to Question 2, they will probably also point out that miscommunication can be an issue between native speakers of the same language. If they don't mention this, you might like to prompt them to do so.

- 2** Note the example of the maintenance truck at the beginning of the article. Standard ICAO (International Civil Aviation Organization) phraseology is now *pass your message* rather than *go ahead*, to eliminate the possibility of such a dangerous misunderstanding.

- 3** Ask students to check answers in pairs.

- 1 misunderstood
- 2 misheard
- 3 both the pilot and the controller
- 4 do not involve
- 5 very complicated
- 6 simple English

- 4** (Suggested answers)

- 1 Speak clearly / use standard ICAO phraseology at all times / be ready to rephrase if a pilot hasn't understood
- 2 Situation 1: the controller should have said *pass your message*; Situation 2: could be avoided with a more complete message such as *hold short of runway 26*; Situation 3: could be solved by replacing the pronouns *he* and *we* with the call sign of the aircraft concerned.

### Vocabulary – Communication

- 1 make
- 2 receive
- 3 give
- 4 read back
- 5 realize
- 6 repeat
- 7 confuse
- 8 give



## Functional English – Asking for information

- 1 Before students begin this activity, you could review how questions are formed in the following tenses:

Present simple: (*do / does*) + subject + verb, e.g. *Do you fly?*

Present continuous: (*am / is / are*) + subject + verb (-*ing* form), e.g. *Are you flying?*

Past simple: *did* + subject + verb, e.g. *Did you fly?*

Present perfect simple: (*has / have*) + subject + verb (past participle), e.g. *Have you flown?*

Present perfect continuous: (*has / have*) + subject + *been* + verb (-*ing* form), e.g. *Have you been flying?*

Future: *will* + subject + verb, e.g. *Will you fly?*

You could also review forming questions with question words, e.g. *how, what, when, how much / often / long*.

Make sure the students know that some verbs will be used twice. For Question 3, *will* rather than *do* can be used if students want to talk about future intentions.

- 1 did
- 2 have
- 3 do / will
- 4 have
- 5 do
- 6 do
- 7 does
- 8 are
- 9 will
- 10 must

- 2 This is an interesting introductory activity at the beginning of the course, particularly if the students don't know each other well. Even if they do, it's a relaxed way of discussing some important issues. If time allows, students could change partners several times, conducting several interviews. For feedback, you can choose particular students and ask their peers to tell you one or two interesting things about them.

## Speaking – English in aviation

(Suggested answers)

- 1 Probably disagree: most French airports have international flights. Even in an airport with no scheduled international flights, an aircraft may need to divert in an emergency, and clear communications in English will be vital. Some argue that there should be a policy whereby French controllers speak English to the French pilots so that foreign pilots in the vicinity can understand.
- 2 Possibly agree: Americans are sometimes criticized for not making enough effort to adjust their rate of speech, to use standardized expressions or to moderate their regional accents in order to be easily understood by the international aviation community.
- 3 Probably disagree: under ICAO regulations only a pilot who never crosses international borders is permitted to fly without English language certification.
- 4 Probably disagree: R / T phraseology is only sufficient in routine situations.
- 5 Probably agree: level 4, to be retested after three years, is the minimum required level. For younger controllers and pilots, level 5, to be retested after six years, or even level 6, certification for life, might be desirable and realistic aims.



## Section two – Airport layout

This section deals with the difficulties for pilots in taxiing around JFK International Airport in New York, with a description of some particular areas of the airport which cause problems. The students listen to a controller talking about these problem areas. The section also introduces prepositions.

- 1** Before opening the Student's Book, ask students about the world's busiest airports and whether they have ever flown into them (if you are teaching pilots), or if they have passed through as passengers. You might then ask them about any experiences or knowledge they may have of the JFK Airport (e.g. *How many runways are there? How busy is it?*). Then ask them to open their books and explain the task.

As well as providing practice in describing positions and use of prepositions, this activity familiarizes students with the airport diagram in preparation for the listening comprehension task.

- 2** **01, 02, 03** Ask students what *hotspots* mean. In this context, *hotspots* are areas of an airport where there is a risk of pilots becoming confused when taxiing and a danger that they will take a wrong turning. Have students look at the five possible hotspots before listening.

1 D      2 E      3 C

### 01 Listening script

Our first hotspot is taxiway E as we approach from taxiway C en route to runway 22R. The signage is confusing, and a blast fence blocks the view of the end of the runway. Aircraft taxiing to 22R via C, often turn too soon and end up on taxiway E. This can mean a very long taxi behind 22R.

### 02 Listening script

A second problem area is taxiway Z crossing runway 13R / 31L. A right turn is required when crossing 13R to taxiway Z on the opposite side. There are two taxi lines leading across. If you follow the wrong one, you could end up with a conflict with arrival traffic on runway 13R. In this situation, advise ATC immediately and get off the runway as quickly as possible.

### 03 Listening script

A third area of concern is using Juliet to transition from A to B south-eastbound. Aircraft outbound from K and KK may sometimes be issued the instruction 'Taxi left A. At J, transition to B.' It's very important not to miss the turn onto B, because J leads across runway 22R.

- 3** **01, 02, 03** Students may need to listen a third time if they are having difficulty, or you could choose to refer them to the listening script.

1 C      2 D      3 E      4 D      5 E

- 4** For trainees who do not have much first-hand experience, this activity could be set as a homework task. They could speak to their instructors or more experienced colleagues and report back on what they said to the class. Controllers who work in en-route centres rather than airports may need to do the same thing.



## Pronunciation – The ICAO alphabet

- 1** **04** If students are unfamiliar with the concept of word stress in pronunciation, you could demonstrate where the stress lies on Quebec (second syllable).

You could either ask students to listen to the other letters and complete the table or to predict where the stress lies before listening.

oO	Oo	Ooo	oOo
H	Z, A	R, J	N, S

### **04 Listening script**

Quebec  
Romeo  
Zulu  
November  
Hotel  
Juliet  
Sierra  
Alpha

- 2/3** **04** Students practise saying the ICAO alphabet. Note that these letters were chosen to be perfectly comprehensible even with a neutral stress pattern, which is the way they are often pronounced in practice.
- 4** This activity provides further practice of all the letters. Encourage students to maintain the correct stress patterns during this activity.

## Vocabulary – Prepositions

Students could refer back to the original airport diagram for a fuller picture. You might need to explain that *taxi towards* means *in the direction of* whereas *taxi to* is an instruction *to go to that point*. Note that *runway holding position markings* refers to places where an aircraft must stop before receiving permission from the tower to cross a runway. An *active runway* is a runway which is in use at that time for landings or take-offs or both.

- 1 on
- 2 from
- 3 to
- 4 via
- 5 along
- 6 across
- 7 onto
- 8 into
- 9 At
- 10 ahead on
- 11 towards

## Speaking – Sketching out an airport

- 1 / 2** This activity provides students with free practice. With 1,100 movements per day, this will be a very busy airport. IFR / VFR implies that light aircraft (VFR traffic) as well as passenger jets (IFR traffic) will be using the airport. See the introductory notes to Unit 2 for a full explanation.

Students may ask additional questions, e.g. *How much land is available? How many runways are planned? What are the environmental constraints?* Suggest that they should try to be as cost effective, space efficient and environmentally friendly as possible.

You could do this activity in groups rather than in pairs if you think some of your students may struggle with it. Alternatively, students who are still having problems could describe an existing airport they know well. Preparation could also be set as a homework activity.

Allocate each pair or small group some time to present their plans to the class. Their presentation should prompt further questions and provide useful communicative practice.



## Section three – Ground operations

This section deals with an incident relating to a dangerous runway incursion by a pilot who was confused and did not correctly follow his taxiing instructions. As well as further comprehension practice, the activities present and practice the vocabulary and language function for describing actions and position.

- 1** Runway incursions are one of the key safety issues at many airports. A rising incidence of runway incursions alerts experts to the risk of a serious accident. Students are likely to be aware of the seriousness of the problem. Nevertheless, some of their stories may be humorous, involving, for example, the appearance of unusual animals.

- 1 An incident where an aircraft, a person or a vehicle mistakenly goes onto a runway that has been assigned for the landing or take-off of an aircraft.
- 2 (Suggested answers): miscommunication, animals, pilot / controller error, construction work, unauthorized personnel, lack of visibility.
- 3 (Suggested answers): improve communication as in recommendations from Section 1, improve security and maintain perimeter fences to prevent unauthorized personnel or animals from entering.

- 2** **05** Tell the students that this listening is an example of communication problems during a runway incursion.

You could ask students to read the summary and predict or speculate on the likely answers. At the same time they should ask you about any vocabulary in the paragraph which is unclear. Ask them if they think that runway incursions are more likely to occur in marginal weather conditions. Although it's easier to take a wrong turning in conditions of low visibility, in good weather conditions there might be a tendency to become complacent.

marginal, inbound, active, takes off, stop, clears

### 05 Listening script

**C = Controller, P = Pilot**

- C** MC798, say your position.  
**P** We're clear of the runway on ... er ... N by B, MC798.  
**C** MC798, thank you. Taxi to the ramp via taxiways N and T. Report crossing runway 16.  
**P** Roger. N, T and report crossing 16, MC798. MC798 is on N by the runways here ... er ... we can't see much because it's so foggy. Are we cleared to cross straight ahead on N?  
**C** MC798, cross runway 16. Join taxiway NT on the opposite side.  
**P** NT on the opposite side. We're approaching Kilo here ... oh ... There's somebody taking off!  
**C** MC798, you shouldn't be near K. Hold your position!  
**P** Tower, this is MC798. We are on a runway. I'm currently looking to the right at K. We are on 23R at the intersection of 16. We did not connect on N. We are by K. K is to our right. We're on an active runway. MC798.  
**C** MC798, 23R is not an active runway.  
**P** Er ... I'm sorry. Ma'am. We're on 23L and 16 and I am facing K. I'm looking out the window and I can see a sign that says '23L' to my right and there is a sign saying '16' to my left and a yellow sign saying 'K' to my right and another sign to my left.  
**C** MC798. Just go straight ahead. Tell me when you get to the next sign please.  
**P** OK, we're on 23L. We are approaching K now.  
**TWR** MC798. Roger. Turn right at K and make a slight left turn onto taxiway C. Hold short of runway 23R.  
**P** We're on K and we're clear of the runway. We're approaching C on K.





## Section four – Language development

### Functional English – Question forms

- 1
  - 1 When did you start your career in aviation?
  - 2 What aspect of your job do you enjoy most/most enjoy?
  - 3 Which airports have you worked at?
  - 4 How many hours a week do you usually work on average?
  - 5 When did you last experience a communication problem in English?
  - 6 How often do you have to attend training courses?
  - 7 How much language training will you have this year?
  - 8 How long did you train to do your job?
- 2 Students' own answers.

### Describing actions and position

- 3
  - 1 is taxiing towards
  - 2 is exiting
  - 3 There is, taking off
  - 4 There are, standing
  - 5 is exiting
  - 6 is taxiing into
  - 7 are queuing
  - 8 is approaching
  - 9 is taxiing along

- 4
  - 1 landed on
  - 2 taxi from
  - 3 taxied along
  - 4 continued straight ahead
  - 5 went across
  - 6 taxiing into
  - 7 carried on towards
  - 8 came nose-to-nose

### Vocabulary – Communication

- 1
  - 1 read back / repeated, misunderstood
  - 2 keep
  - 3 wait
  - 4 misunderstand
  - 5 issued
  - 6 responding, include
  - 7 mispronounces
  - 8 gives, repeat

### Parts of an airport

- 2
  - 1 hotspot
  - 2 taxiway
  - 3 arrow
  - 4 blast fence
  - 5 signage
  - 6 pavement markings
  - 7 intersection
  - 8 terminal



### PHOTOCOPIABLE ACTIVITY

This text is a true account of an incident where a baggage handler was trapped in the cargo hold, but was rescued before a transatlantic flight took off. A comprehension activity follows the text and then a discussion activity.

- 1 One sentence has been removed from each of the four paragraphs. Students have to correctly insert these sentences.

#### Key

Paragraphs 1, 2, 3: penultimate sentence  
Paragraph 4: second sentence

- 2
  - 1 The last paragraph is deliberately vague. The two baggage handlers who were not rescued in time survived. Allow students to discuss the questions fully before telling them this.
  - 2 It is possible to survive as the cargo hold, which often carries pets, is pressurized.
  - 3 (Suggested answers): shock, exposure to cold
  - 4 Such incidents are rare but they should not happen at all. Let the students explain their ideas to the class for a system that ensures this is the case.





- 1 Read the text. One sentence is missing in each of the paragraphs. Mark the position where it should be inserted.

## Baggage handler saved by his mobile phone

In December 2005, a 55-year-old baggage handler was trapped in the hold of an Airbus A330 at Dublin airport. The aircraft, with 325 passengers on board, had pushed back and begun taxiing towards the runway. The aircraft was bound for Los Angeles. Luckily the baggage handler was able to use his mobile phone to call his company representative who then alerted the air traffic controllers. The cargo hold door was opened and the baggage handler released.

The incident occurred because the baggage handler, who was the leader of the team loading baggage for that flight, had entered the hold at the last minute to move some baggage. Not realizing that he was still inside, one of his colleagues shut the cargo hold door and gave the 'thumbs up' signal that the flight was ready to depart. The aircraft was cleared to push back and commence taxiing. It was only when the engines powered up

that the baggage handler realized he was trapped.

The baggage handler was not injured though he was in a state of shock. It was thanks to the fact that he was carrying his mobile phone that he was able to raise the alarm and save himself from the traumatic ordeal of a transatlantic flight. In it, they recommended that procedures relating to last-minute adjustments or removals of items from the hold be tightened up.

While this incident was unusual, it was not the first time that it has happened. In March 2005, a trapped baggage handler flew for almost two hours from Chicago to Philadelphia in the cargo hold. In 2001, another trapped baggage handler flew all the way from Dallas to Puerto Vallarta, a three-hour flight. In both cases the men tried to escape before take-off by banging on the cargo door. They were not as fortunate as the man involved in the incident at Dublin airport.

Paragraph 1: They immediately informed the pilots who returned to the stand.

Paragraph 2: During push back the lights in the cargo hold remained on.

Paragraph 3: The final report on this incident was issued by investigators in April 2007.

Paragraph 4: In some cases the problem has not been discovered until a plane has landed.

- 2 Work in pairs. Discuss the following questions.

- 1 Do you think the two baggage handlers mentioned in the last paragraph survived their flights?
- 2 Would the Dublin airport baggage handler have been able to survive if the aircraft had taken off?
- 3 If a baggage handler can survive, what might the person's physical condition be on arrival?
- 4 How can such incidents be prevented?