# Aviation

## ENGLISH

**For ICAO compliance**

**Henry Emery & Andy Roberts**

**MACMILLAN**

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**with Ruth Goodman and Louis Harrison**

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# INTRODUCTION

This course is for aviation professionals – particularly **pilots** and **air-traffic controllers** – who wish to reach and maintain level 4 (operational) as measured by the **ICAO Language Profile descriptors** (see pages vi and vii). The course aims to increase confidence in communication and develops the very specific skills described in the **ICAO level 4** language profile. These are the skills needed to succeed in any Level 4 assessment and also to function effectively and safely in an aviation environment.

This course does not aim to teach the phraseology that aviation professionals need but it is included to provide a context for the plain English needed for communication between pilots and air-traffic controllers, and between pilots and pilots. The main focus is on the language needed to communicate in non-routine and / or emergency situations during flight operations.

The Student's Book contains the material for the course in the form of reading and listening texts. The main purpose of this is to present new vocabulary and to provide a context for the exercises and language functions. There are lots of pair-work and group-work activities for speaking practice for the benefit of students using the course in a classroom situation.

The course is intended both for **independent study** and for classroom use. The CD-ROM supports the student's book with interactive language and pronunciation exercises, simulations in which the student can participate, and all the audio files from the Student's Book. The Teacher's Book contains extra support and ideas that can be used to supplement the material contained in this Student's Book.

## STUDENT'S BOOK

Each of the 12 units in the Student's Book is divided into four two-page sections.

### Section 1

is based on a reading text and provides an introduction to the main theme of the unit.

### Section 2

is based on a listening text or texts and provides sustained listening and pronunciation practice work.

### Section 3

is based on an emergency or non-routine flight operation scenario. It always contains a listening text or texts involving a radio telephony exchange with a mixture of phraseology and plain English.

### Section 4

is an extension section which includes further practice, consolidation and extension of language taught within the unit.

## CD-ROM

The interactive CD-ROM complements the material in the Student's Book by providing interactive simulations, detailed pronunciation and extra listening. The CD-ROM material is split into 12 units which match those of the Student's Book. It has two sections.

### Section 1

contains further practice on pronunciation and listening,

### Section 2

contains animated interactive sequences in which students are encouraged to use the language taught in the corresponding unit of the book. Students can compare their own speech with model responses and take the role of characters in the animation.

*We hope that you enjoy using Aviation English.*

**Henry Emery**
**Andy Roberts**

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# CONTENTS

| Level | Pronunciation<br>Assumes a dialect and / or accent intelligible to the aeronautical community | Structure<br>Relevant grammatical structures and sentence patterns are determined by language functions appropriate to the task | Vocabulary |
|---|---|---|---|
| Expert<br>6 | Pronunciation, stress, rhythm, and intonation, though possibly influenced by the first language or regional variation, almost never interfere with ease of understanding. | Both basic and complex grammatical structures and sentence patterns are consistently well controlled. | Vocabulary range and accuracy are sufficient to communicate effectively on a wide variety of familiar and unfamiliar topics. Vocabulary is idiomatic, nuanced, and sensitive to register. |
| Extended<br>5 | Pronunciation, stress, rhythm, and intonation, though influenced by the first language or regional variation, rarely interfere with ease of understanding. | Basic grammatical structures and sentence patterns are consistently well controlled. Complex structures are attempted but with errors which sometimes interfere with meaning. | Vocabulary range and accuracy are sufficient to communicate effectively on common, concrete, and work-related topics. Paraphrases consistently and successfully. Vocabulary is sometimes idiomatic. |
| Operational<br>4 | Pronunciation, stress, rhythm, and intonation are influenced by the first language or regional variation but only sometimes interfere with ease of understanding. | Basic grammatical structures and sentence patterns are used creatively and are usually well controlled. Errors may occur, particularly in unusual or unexpected circumstances, but rarely interfere with meaning. | Vocabulary range and accuracy are usually sufficient to communicate effectively on common, concrete, and work-related topics. Can often paraphrase successfully when lacking vocabulary in unusual or unexpected circumstances. |
| Pre-Operational<br>3 | Pronunciation, stress, rhythm, and intonation are influenced by the first language or regional variation and frequently interfere with ease of understanding. | Basic grammatical structures and sentence patterns associated with predictable situations are not always well controlled. Errors frequently interfere with meaning. | Vocabulary range and accuracy are often sufficient to communicate on common, concrete, or work-related topics but range is limited and the word choice often inappropriate. Is often unable to paraphrase successfully when lacking vocabulary. |
| Elementary<br>2 | Pronunciation, stress, rhythm, and intonation are heavily influenced by the first language or regional variation and usually interfere with ease of understanding. | Shows only limited control of a few simple memorized grammatical structures and sentence patterns. | Limited vocabulary range consisting only of isolated words and memorized phrases. |
| Pre-Elementary<br>1 | Performs at a level below the Elementary level. | Performs at a level below the Elementary level. | Performs at a level below the Elementary level. |

| Fluency | Comprehension | Interactions |
|---------|---------------|--------------|
| Able to speak at length with a natural, effortless flow. Varies speech flow for stylistic effect, e.g. to emphasize a point. Uses appropriate discourse markers and connectors spontaneously. | Comprehension is consistently accurate in nearly all contexts and includes comprehension of linguistic and cultural subtleties. | Interacts with ease in nearly all situations. Is sensitive to verbal and non-verbal cues, and responds to them appropriately. |
| Able to speak at length with relative ease on familiar topics, but may not vary speech flow as a stylistic device. Can make use of appropriate discourse markers or connectors. | Comprehension is accurate on common, concrete, and work-related topics and mostly accurate when the speaker is confronted with a linguistic or situational complication or an unexpected turn of events. Is able to comprehend a range of speech varieties (dialect and / or accent) or registers. | Responses are immediate, appropriate, and informative. Manages the speaker / listener relationship effectively. |
| Produces stretches of language at an appropriate tempo. There may be occasional loss of fluency on transition from rehearsed or formulaic speech to spontaneous interaction, but this does not prevent effective communication. Can make limited use of discourse markers or connectors. Fillers are not distracting. | Comprehension is mostly accurate on common, concrete, and work-related topics when the accent or variety used is sufficiently intelligible for an international community of users. When the speaker is confronted with a linguistic or situational complication or an unexpected turn of events, comprehension may be slower or require clarification strategies. | Responses are usually immediate, appropriate, and informative. Initiates and maintains exchanges even when dealing with an unexpected turn of events. Deals adequately with apparent misunderstandings by checking, confirming, or clarifying. |
| Produces stretches of language, but phrasing and pausing are often inappropriate. Hesitations or slowness in language processing may prevent effective communication. Fillers are sometimes distracting. | Comprehension is often accurate on common, concrete, and work related topics when the accent or variety used is sufficiently intelligible for an international community of users. May fail to understand a linguistic or situational turn of events. | Responses are sometimes immediate, appropriate, and informative. Can initiate and maintain exchanges with reasonable ease on familiar topics and in predictable situations. Generally inadequate when dealing with an unexpected turn of events. |
| Can produce very short, isolated, memorized utterances with frequent pausing and a distracting use of fillers to search for expressions and to articulate less familiar words. | Comprehension is limited to isolated, memorized phrases when they are carefully and slowly articulated. | Response time is slow, and often inappropriate. Interaction is limited to simple routine exchanges. |
| Performs at a level below the Elementary level. | Performs at a level below the Elementary level. | Performs at a level below the Elementary level. |

# RUNWAY INCURSION

## Section one – Avoiding miscommunication

**1** Work in pairs. Discuss the questions below. Ask each other questions to get more details.

   1  Have you ever worked with someone whose English you didn't understand?

   2  What are some of the causes of miscommunication between controllers and pilots? Note down your ideas.

**2** Read the article about a report from a National Aviation Safety Investigation on tower-pilot communications. Check which of your ideas from activity 1 are included.

> A maintenance truck radios the tower. 'Go ahead' says the controller waiting for the driver to make his request. The truck driver, thinking he has received his clearance, drives onto the runway.

> Holding short of the runway, the captain asks 'may we cross?' The controller gives the response 'hold short'. The captain understands 'oh sure', and crosses the runway.

> A pilot reads back the message 'He will turn right' as 'We will turn right.' Because of his strong accent, nobody realizes the mistake until the plane has gone the wrong way.



A recent report showed that miscommunication is a factor in over 70% of operational errors. The report examined four areas of miscommunication:

1 Requests from the pilot that the controller repeat the instructions
2 Misunderstandings by the pilot that result in incorrect readbacks
3 Failure of the controller to recognize incorrect readbacks
4 Either the controller or the pilot confusing the call sign

Several factors increased the possibility of communication breakdown. The most important was the complexity of the instructions. The following instruction, for example, when analysed, contains eight separate pieces of information, or eight opportunities for miscommunication:

*3890, Ground, give way to the second Dornier inbound, then taxi runway 32 left, intersection departure at Gulf, via outer, Charlie, Gulf.*

A lack of fluency in English can cause confusion both because of mispronunciation and misunderstanding. But too much fluency in English can also be a dangerous thing! Any idiomatic language or inappropriate plain English can cause misunderstandings. Also, instructions spoken too quickly can be very difficult to understand.

The report made the following recommendations for further improvements in ATC communications:

- **Keep instructions short**
- **Listen to what a pilot reads back**
- **Speak slowly**
- **When talking to pilots / controllers who don't speak native English, break up the message into its individual words by using short pauses**
- **Ask when not sure about a piece of information**
- **Include the full call sign when giving an instruction or reading back**
- **Wait for complete aircraft identification following instructions**

**3** Underline the correct information.

1 In the first incident, the maintenance truck driver *misheard / misunderstood* the controller.
2 In the second incident, the captain *misheard / misunderstood* the controller.
3 In the third incident, *the pilot / the controller / both the pilot and the controller* misunderstood the other person.
4 30% of operational errors *involve / do not involve* miscommunication.
5 The main cause of misunderstanding is instructions that are *unclear / very complicated*.
6 The safest way to communicate is using *simple English / natural, fluent English*.

**4** Work in pairs. Discuss the questions.

1 What additional recommendation would you add to the reports?
2 How could each of the three incidents described at the start of the article be avoided?
3 Do you know of any incidents where miscommunication has caused a runway incursion?

## Vocabulary – Communication

Try to remember what verbs are used before the following nouns in the article. Then look back at the text to check.

1 m_____ a request
2 r_____ clearance
3 g_____ a response
4 r_____ a message
5 r_____ a mistake
6 r_____ an instruction
7 c_____ a call sign
8 g_____ an instruction

## Functional English – Asking for information

**1** Use the verbs in the box to complete the questions from an Aviation Authority survey.

does   have   must   do   will   did   are

### Survey

1 When _____ you start to learn English?

2 How long _____ you been studying English?

3 How _____ you try to improve your English outside class?

4 What language training _____ you had already?

5 What _____ you find most difficult about English?

6 How often _____ you use English in your work?

7 How much support _____ your employer give you?

8 Why _____ you studying English?

9 What level of English _____ you be happy with?

10 What level of English _____ you have for your job?

**2** Work in pairs. Interview each other using the questionnaire.

## Speaking – English in aviation

Work in small groups. How far do you agree or disagree with the statements below? Why / Why not?

1 A French ATC speaking to a French pilot at a French airport doesn't need to know English.
2 It's impossible to understand Americans – they don't speak plain English.
3 Pilots have been flying safely for years – they don't need to learn English.
4 R / T phraseology is enough to communicate with.
5 All pilots and ATCs working with international traffic should have ICAO level 5.

## Section two – Airport layout

**1** Work in pairs. You are going to complete a map of JFK Airport. Student A look at the map on this page. Student B look at the map on p 107. Don't look at each other's maps.

> **Student A**
>
> Find out from Student B where the following buildings and features are. Mark them on your map.
>
> - the airport administration offices
> - customs offices
> - the national weather service
> - the postal service offices
> - a helipad
>
> Describe the position of the buildings and features that Student B asks for. The prepositions in the box will be useful.

| in the centre of | in front of | next to | behind |
| opposite | to the north of | parallel to | |
| on the opposite side of | | | |



the general
aviation terminal

the
airport
police
station

the
international
arrivals
terminal

the control
tower

a helipad

the aircraft rescue
and fire-fighting
station
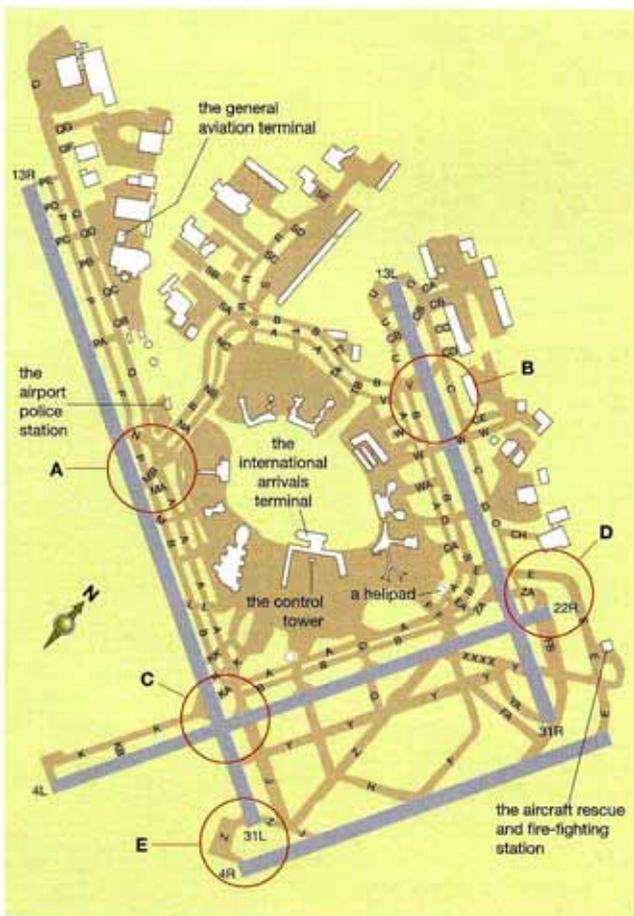
**2** 01,02,03 Listen to an ATC describing three 'hotspots' at JFK. Which three areas (A–E) on the diagram in 1 does she mention?

1 ___
2 ___
3 ___

**3** 01,02,03 Listen again and match each problem with one of the areas in activity 2.

1 Outbound aircraft can easily cross a runway if they miss the taxiway. ___
2 You can't see the runway you are taxiing to. ___
3 Inbound traffic must turn right to avoid conflict. ___
4 You can have a long taxi if you turn left too soon. ___
5 You can easily follow the wrong line. ___

**4** Describe an airport you know, including the taxi circuits for arriving and departing traffic. Are there any hotspots?

### Pronunciation – The ICAO alphabet

**1** 04 Listen and write the letters in the correct column in the table according to their stress pattern. The first one has been done for you.

Q  R  Z  N  H  J  S  A

| oO | Oo | Ooo | oOo |
|---|---|---|---|
| Q | | | |

**2** 04 Listen again and repeat.

**3** Work in pairs. Add the missing letters of the ICAO alphabet to the table.

**4** Spell the following items for your partner to write down.
- the town where you were born
- your full name
- your address

## Vocabulary – Prepositions

Below is a controller's report of an incident in area C of the aerodrome.
Complete the report with the missing prepositions.

to    at    ahead    on    towards    into    onto    across    from    via    along

---

## Controller's report

QE433 landed (1) _____ runway 22R in marginal
weather conditions. The crew were issued
instructions to taxi (2) _____ the runway (3) _____
the apron on K and B (4) _____ KA. They taxied
(5) _____ K, but missed the sign and the runway
holding position markings for 13R, and went
(6) _____ the active runway and (7) _____ KA
on the opposite side. At the same time, a 747
was taxiing (8) _____ position on runway 13R.
(9) _____ the intersection with B, the crew missed
the arrow pointing right. It continued straight
(10) _____ and taxied (11) _____ the terminal
on A. QE433 finally came nose-to-nose with the
outbound 747.



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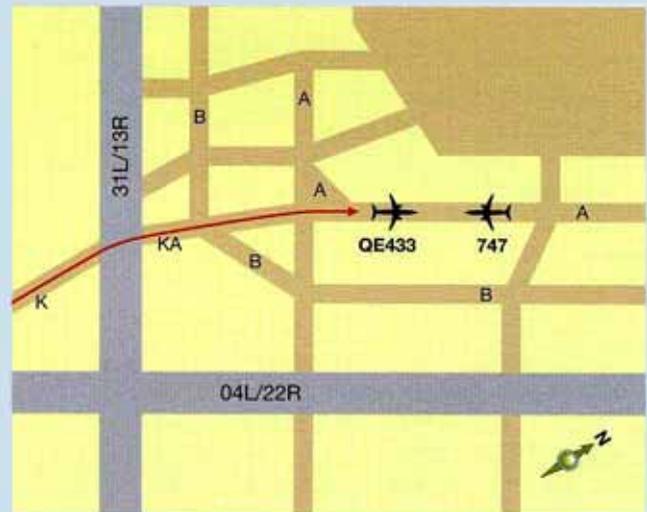
## Speaking – Sketching out an airport

1 Work in pairs. Look at the aerodrome information. Design an aerodrome layout including runway and taxiway configuration and the taxi circuit. Mark these positions on your diagram:

- Where ATC issue runway-in-use information and taxi clearances
- The holding position(s) in case of traffic conflict
- Where ATC issue take-off clearance
- Where ATC issue clearance to taxi to apron
- Where ATC issue parking information

2 Compare your ideas with another pair.

### Aerodrome data

**Prevailing wind:** 230°

**Type of traffic:** IFR/VFR, private, scheduled, domestic and international

**Average daily traffic movements:** 1,100
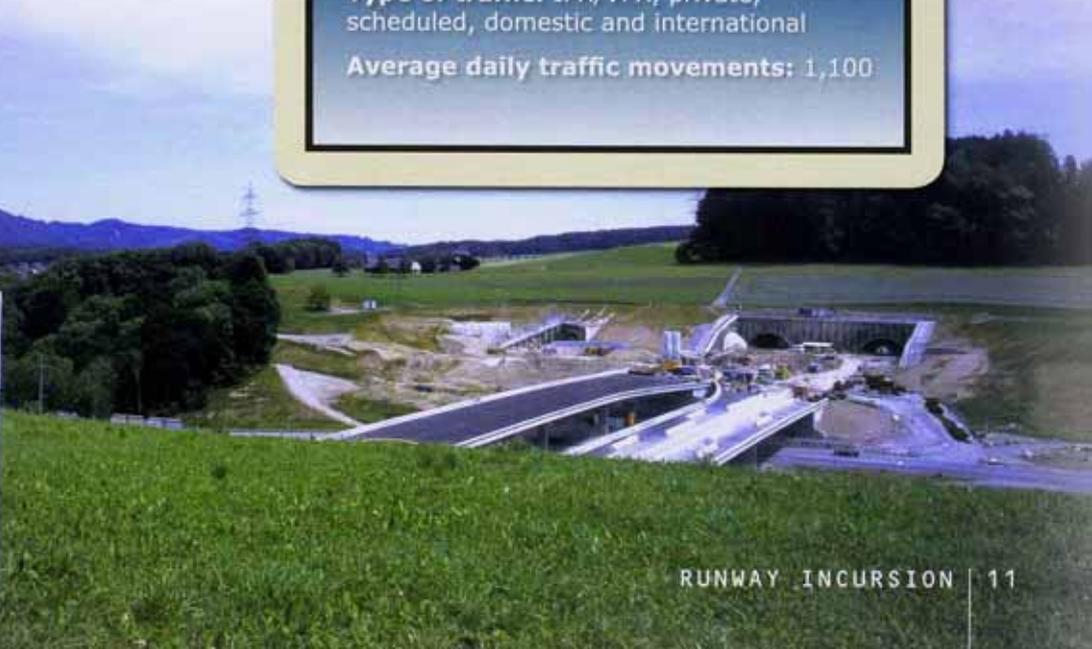
# Section three – Ground operations
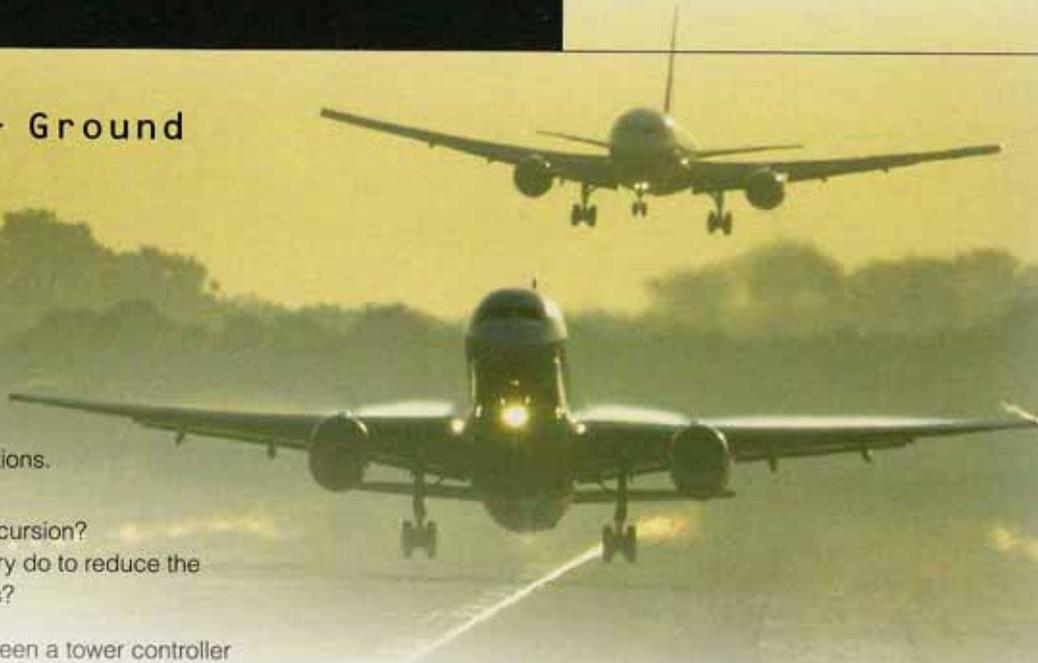
1 Work in pairs. Discuss the questions.
  1 What is a runway incursion?
  2 What can cause a runway incursion?
  3 What can the aviation industry do to reduce the number of runway incursions?

2 🔊 05 Listen to a dialogue between a tower controller and a pilot. Underline the correct word to complete the summary of the incident.

> In *marginal / good* weather conditions, an *inbound / outbound* aircraft takes the incorrect taxiway and moves onto an *active / inactive* runway. Another aircraft *lands / takes off* in front of the aircraft. The tower controller tells the crew to *turn left / stop*. In the end the plane *follows / clears* the runway.

3 🔊 05 Listen again and mark on the diagram:
  1 The route the tower controller expects the plane to take.
  2 The route the plane actually takes.
  3 The position where the plane stops to wait for further instructions.
  4 The position where the tower thinks the plane has stopped to wait for further instructions.
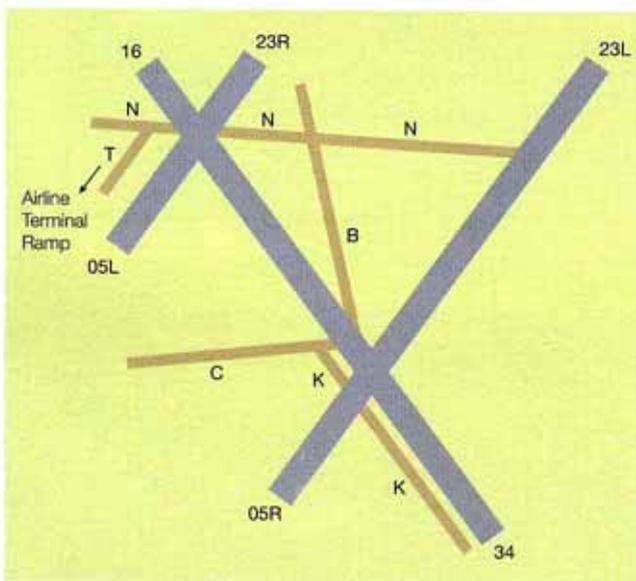
## Pronunciation – Numbers

1 🔊 06 Listen to the call signs. Correct any mistakes.
  1 FR~~369~~ 396
  2 AQ692
  3 CZ310
  4 LN488
  5 HY557
  6 JM402

2 Work in pairs. Practise saying call signs. Student A, go to p 104. Student B, go to p 107.

## Vocabulary – Verbs describing actions and position

Put these ground manoeuvres in the correct column according to their speed in routine operations.

~~stand~~   ~~move around~~   approach   turn   push back
head   wait   roll for take-off   taxi   queue
touch down   exit   face

| no movement | slow | fast |
|---|---|---|
| stand | move around | |

## Functional English – Describing actions and position

Look at these extracts from the dialogue.

*I'm* fac**ing** Kilo.
*We* **are** approach**ing** Charlie on Kilo.
**There's** somebody tak**ing** off!
**There** are signs show**ing** the runways.

Complete the description of the picture with the verbs from the Vocabulary section in the correct form.
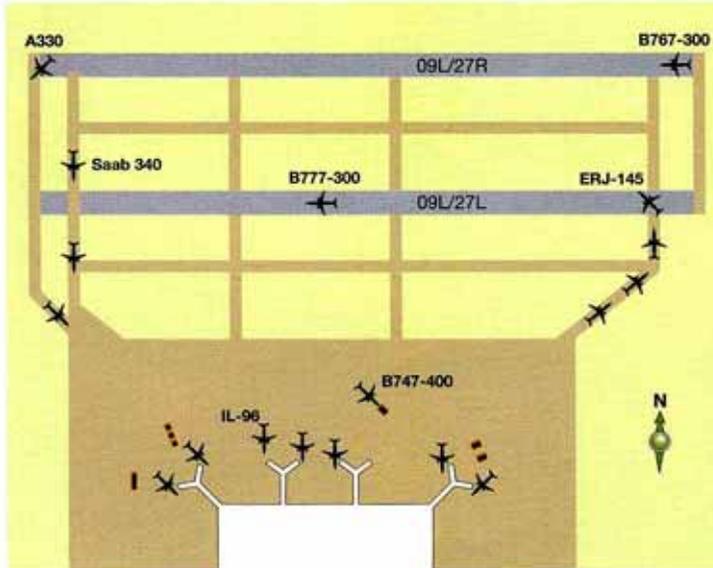


1  *There's* a 767-300 *touching down* on runway 27R.
2  An A330 *is turning* left.
3  It _____ the far end of the same runway.
4  _____ two aircraft _____ towards the apron.
5  A Saab 340 _____ south. It _____ to cross runway 27L.
6  On runway 27L a B777-300 _____ for take-off.
7  An Embraer ERJ-145 _____ into position.
8  After the Embraer, _____ three more aircraft _____ to depart on runway 27L.
9  A few service vehicles _____ around on the apron.
10  Seven aircraft _____ at the gates.
11  A truck _____ a 747-400.
12  An IL-96 _____ its gate.

## Speaking

1  Work in pairs to complete your pictures of an airfield. Student A look at this page. Student B go to p 107.
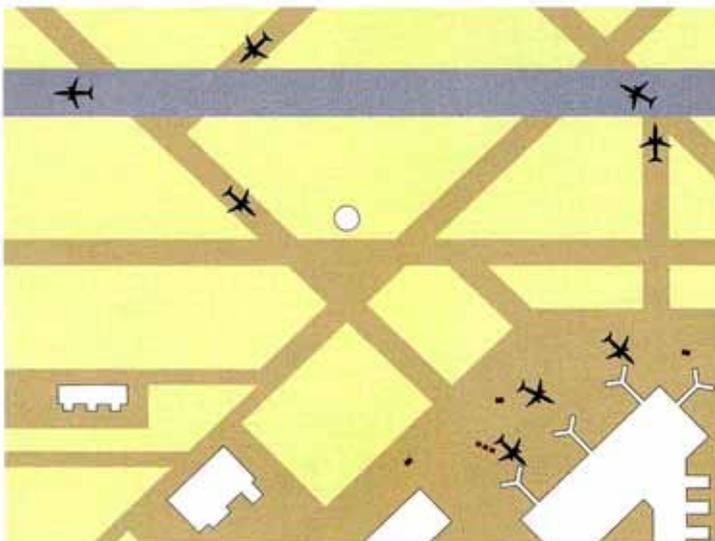


2  Work in pairs. Discuss the questions.

1  What factors increase the possibility of hotspots?
2  What can be done to reduce hotspots?
3  Are hotspots becoming more or less of a problem?
4  Which airports have the most / fewest hotspots?

## Section four – Language development

### Functional English – Question forms

**1** Rearrange the words to make questions.

1  you / aviation / start / career / your / when / did / in?

_____

2  of / aspect / your / do / most / you / job / enjoy / what?

_____

3  have / which / worked / you / at / airports?

_____

4  hours / week / average / how / on / work / many / a / you / usually / do?

_____

5  you / did / problem / in / experience / when / last / English / communication / a?

_____

6  how / to / do / training / often / have / you / attend / courses?

_____

7  language / much / will / training / have / you / year / this / how?

_____

8  long / did / how / to / your / do / job / train / you?

_____

**2** Answer the questions using full sentences.

Example

*I started my career in aviation five years ago.*

### Describing actions and position

**3** Look at the diagram and complete the description of what the planes mentioned are doing.
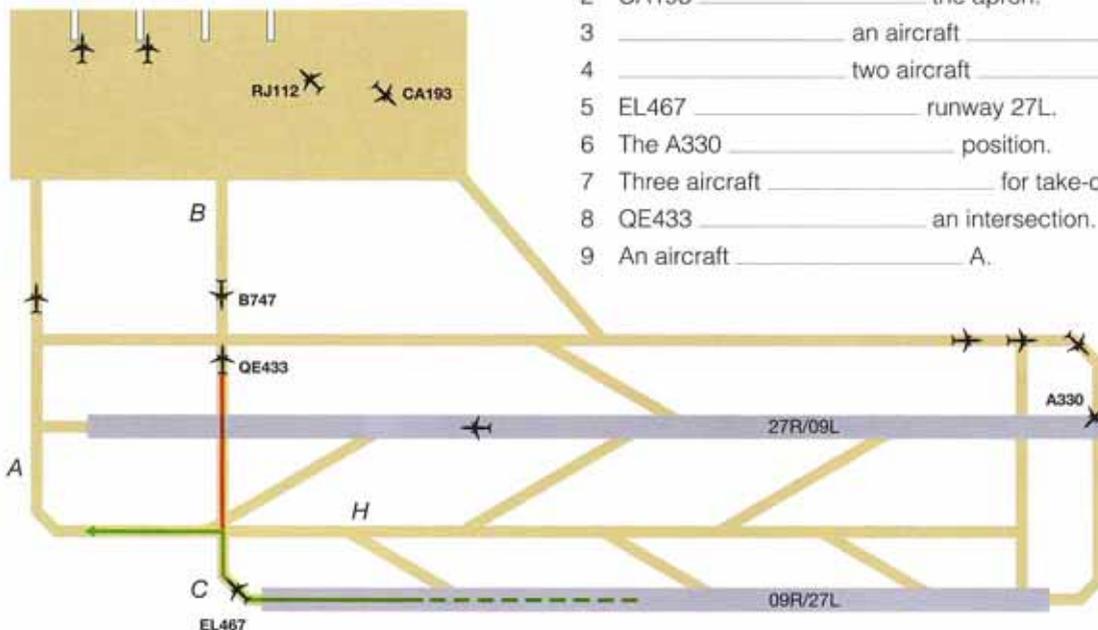


1  RJ112 _____ its gate.

2  CA193 _____ the apron.

3  _____ an aircraft _____ on runway 27R.

4  _____ two aircraft _____ at the gates.

5  EL467 _____ runway 27L.

6  The A330 _____ position.

7  Three aircraft _____ for take-off on runway 27R.

8  QE433 _____ an intersection.

9  An aircraft _____ A.

**4**  Read this report of the incident shown in 3. Complete it with the words from the box.

came nose-to-nose    continued straight ahead    taxied along    landed on    taxi from
carried on towards    taxiing into    went across

## Incident report

QE433 (1) _____ runway 27L in fog. The tower issued instructions to (2) _____ the runway to the apron on C and A via H. It (3) _____ C, but at the intersection with H, the crew missed the arrow pointing left, and (4) _____. They then missed the sign for runway 09L, and (5) _____ the active runway and onto B on the opposite side. At the same time, an A330 was (6) _____ position on runway 27R. QE433 (7) _____ the terminal and (8) _____ with an outbound 747 on B.

## Vocabulary – Communication

**1**  Complete each sentence with a verb related to communication in the correct form.

1  When the pilot r_____ the instruction, I realized that he had m_____ me.
2  Controllers should k_____ their instructions short and simple.
3  Hold short of the runway and w_____ for further instructions.
4  Pilots can m_____ complex instructions, so it's best to break them up.
5  The truck driver thought the tower had i_____ clearance to cross the runway.
6  When r_____ to an ATC traffic call-out, the pilot should i_____ his call sign.
7  If a controller m_____ a word, the pilot may not understand.
8  If a pilot g_____ an incorrect readback, r_____ the instruction.
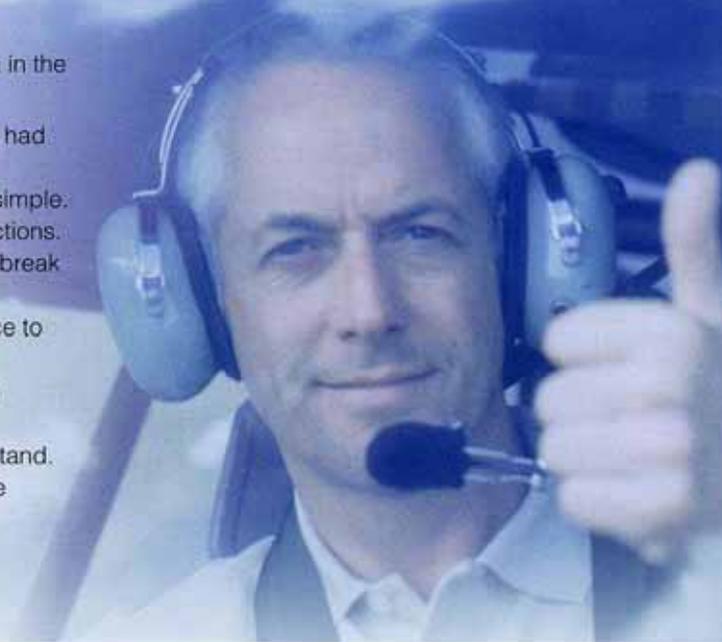
## Parts of an airport

**2**  Rearrange these letters to make features of an airport.

1  **tootpsh**            a point in an airport where there is danger of runway incursions         _____
2  **awaxity**            a road that planes take to get to and from the runway                    _____
3  **worar**              a symbol that shows you which way to go                                  _____
4  **stabl cenef**        a barrier that protects an area from the force of jet engines            _____
5  **naggise**            letters, numbers and symbols that are positioned around an airport
                          to show pilots where they are and which way to go                        _____
6  **menavept krimsang**  lines and letters painted on the ground                                  _____
7  **nittercoseni**       a place where two runways, roads, etc. cross                             _____
8  **altremin**           the main building at an airport                                          _____