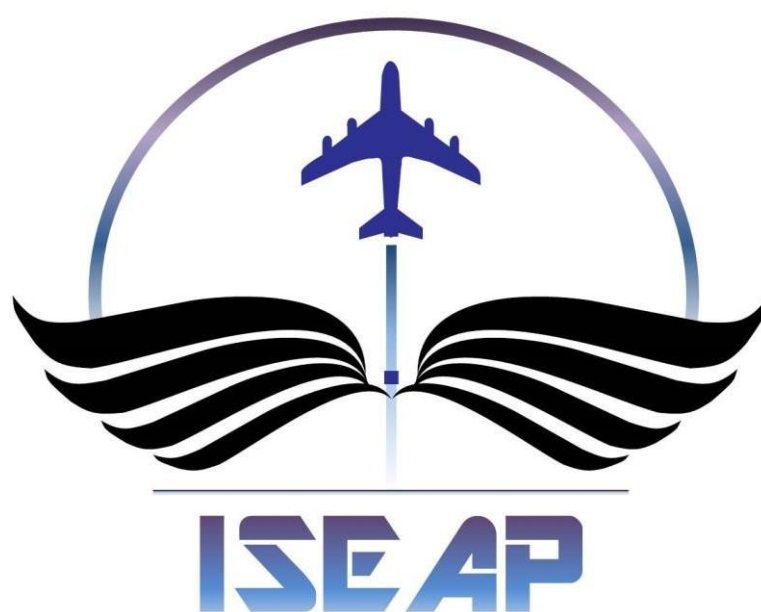


# **INSTITUTO SUPERIOR DE ENSEÑANZA AERONÁUTICA PALOMAR**

**CIAC – ISEAP**



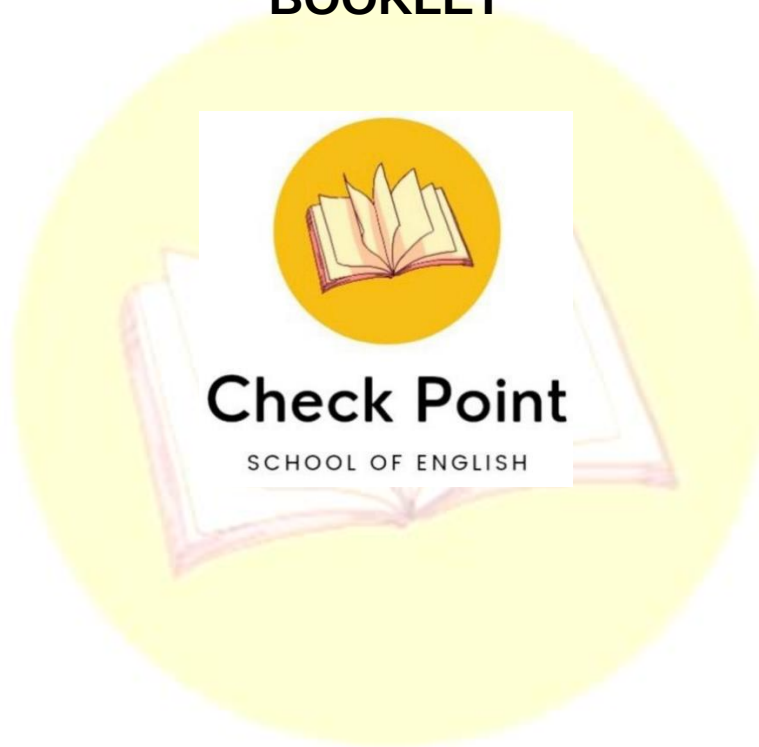
## **Inglés Técnico Aeronáutico**

Buenos Aires 2022



# AVIATION ENGLISH

## BOOKLET



# Check Point

SCHOOL OF ENGLISH

# 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.

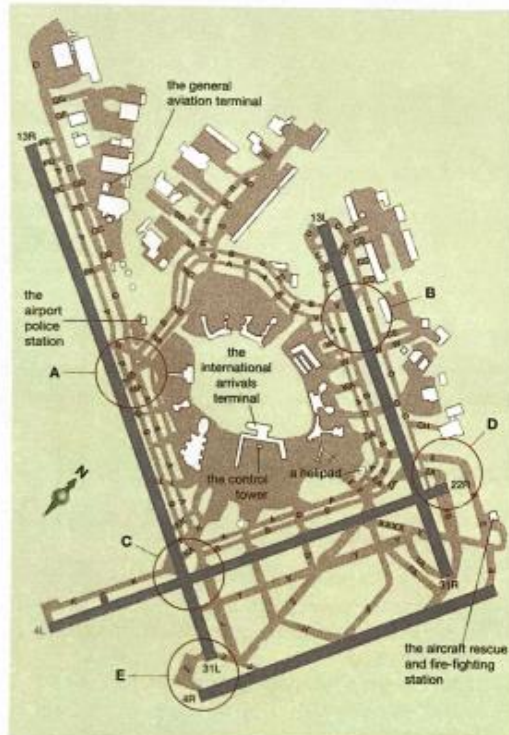
### Student A

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



- 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

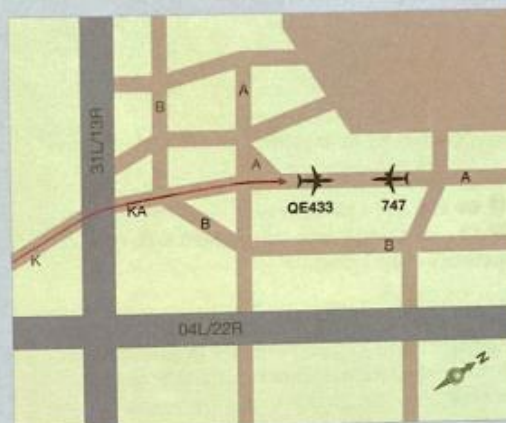


Below is a controller's report of an incident in area C of the aerodrome.  
Complete the report with the missing prepositions.

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.



### Speaking – Sketching out an airport

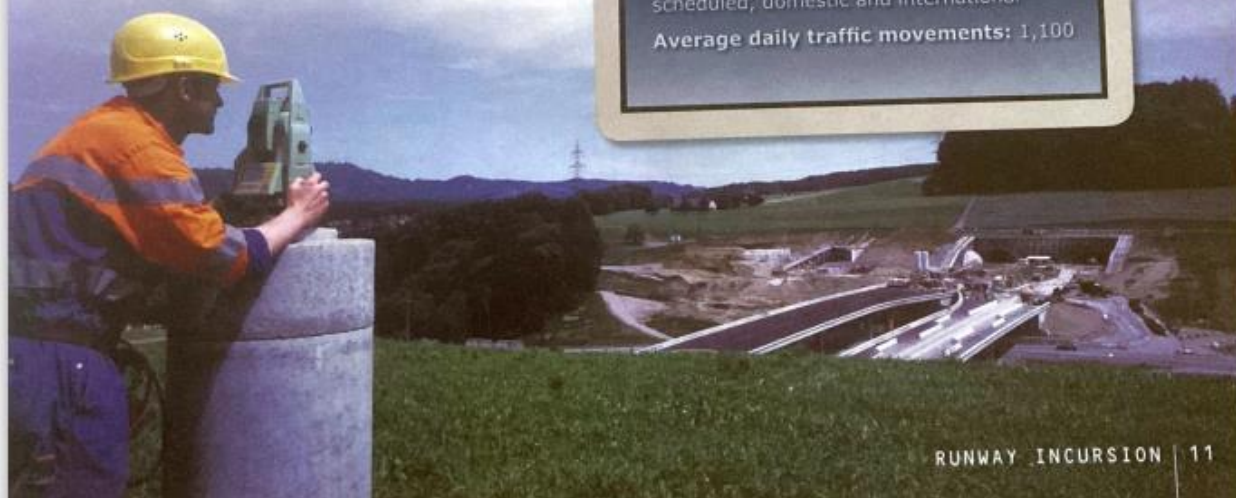
- Work in pairs. Look at the aerodrome information. Design an aerodrome layout including runway and taxiway configuration and the taxi circuit. Mark these positions on your diagram:
  - Where ATC issue runway-in-use information and taxi clearances
  - The holding position(s) in case of traffic conflict
  - Where ATC issue take-off clearance
  - Where ATC issue clearance to taxi to apron
  - Where ATC issue parking information
- 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



RUNWAY INCURSION 11

## Section three - Ground operations

1 Work in pairs. Discuss the questions.

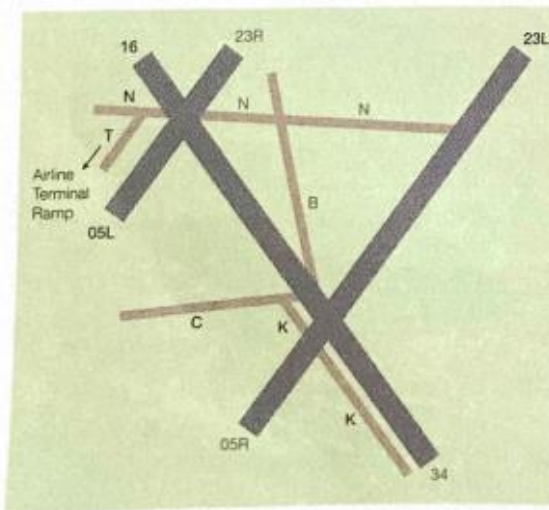
- 1 What is a runway incursion?
- 2 What can cause a runway incursion?
- 3 What can the aviation industry do to reduce the number of runway incursions?

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.

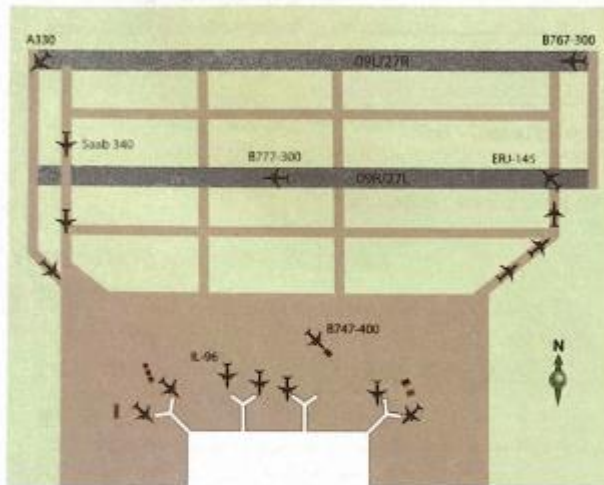
*I'm facing Kilo.*

*We **are** approaching Charlie on Kilo.*

***There's** somebody **taking** off!*

***There** are signs **showing** the runways.*

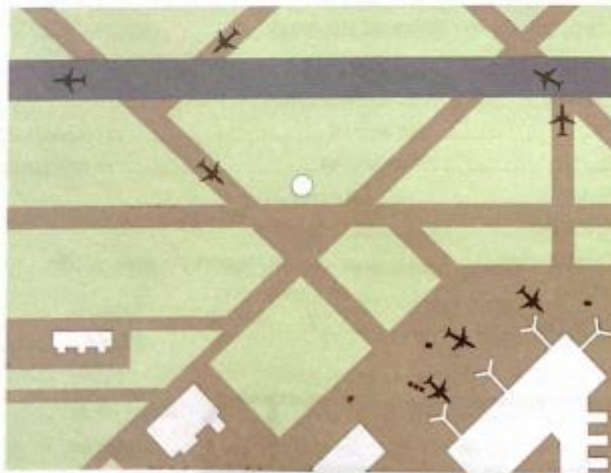
Complete the description of the picture with the verbs from the Vocabulary section in the correct form.



- 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?

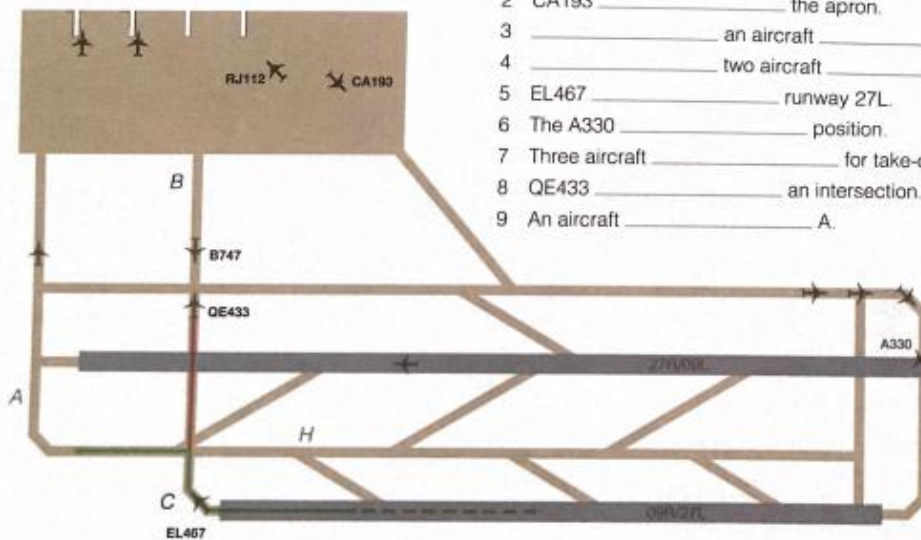
2 Answer the questions using full sentences.

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

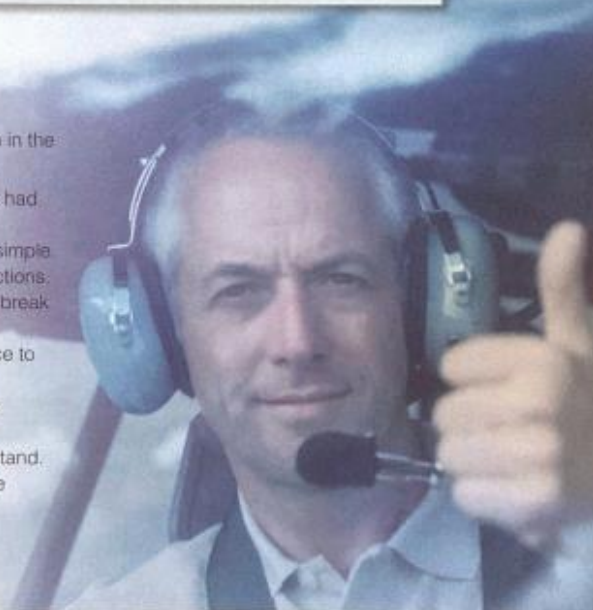
## Incident report

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 tootps h          | 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                                                                                      | _____ |

# TECHNOLOGY

## Section one – Datalink

- 1 Look at the pictures of Datalink communication system. Tell the group what you know about this technology.
- 2 Work in pairs. Before you read the article, note down advantages and disadvantages of using text rather than voice communication.
- 3 Read the text. Tick (✓) your ideas that are mentioned.

### IS THIS THE END FOR VOICE COMMUNICATION?

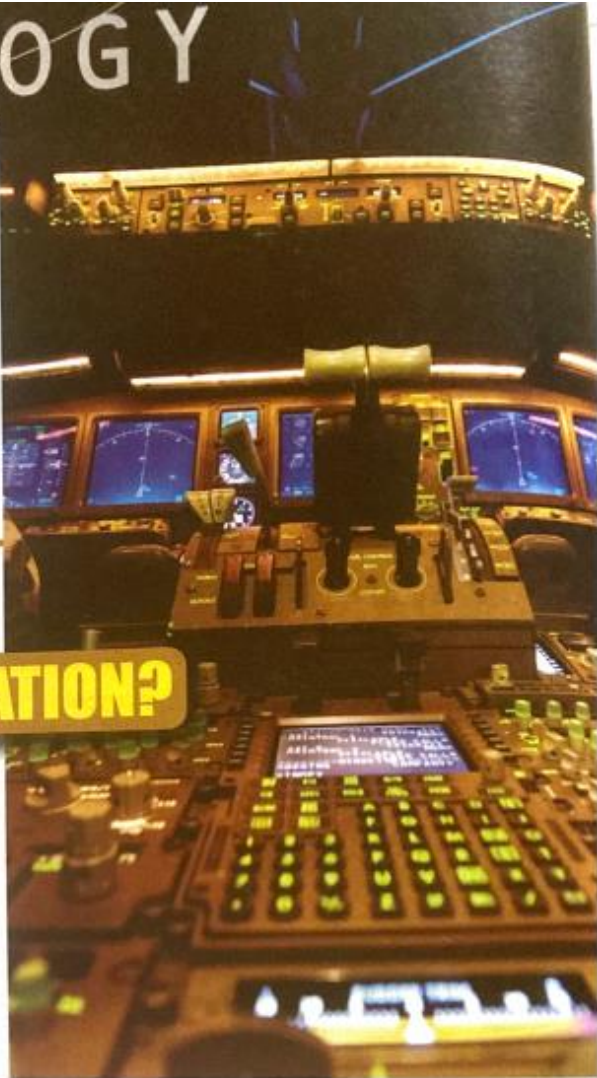
Datalink allows routine air traffic instructions and requests to be sent as text messages instead of via traditional voice communications. The pilot uses Datalink for requesting changes of level or speed, while the controller uses it to give **clearance** for level or speed changes and **frequency** changes. Controllers also use it in order to manage a larger number of aircraft – some claim it could eventually increase **capacity** by 40%.

Clear traffic instructions sent in a pre-formatted text message avoid the need for repetition, and reduce communication errors such as simultaneous **transmissions** and misheard instructions and requests. The messages are delivered in near-real time, and with higher reliability than voice transmissions. Datalink has reduced airspace **congestion**, and many people think it has helped to make communications fast and safe.

However, Datalink also has its drawbacks. It allows 'free text' messages, so that the crew can use their own words to deal with non-routine events. However, even when the pilot writes the message carefully, controllers sometimes do not understand the message, as they may not use the same words and abbreviations, especially when they do not speak the same language. Using text

also increases the crew's workload – in an emergency situation, they cannot afford the **heads-down time** required to read and write messages. Another drawback is that when Datalink messages get out of **sequence**, pilots do not have the time to match messages to responses. Finally, in a mixed voice-data **environment**, the crew's attention is divided, making it easier to miss a voice call.

There can be no doubt that Datalink has an important place in the future of civil aviation communications. But when we need to communicate beyond simple routine messages – for example, in an emergency – there is no substitute for talking.



- 4 Read the text again and decide if the sentences are true or false. Write *T* or *F*.

- 1 Datalink reduces voice communication by 40%. \_\_\_\_\_
- 2 The pilot receives a text message almost immediately. \_\_\_\_\_
- 3 Datalink allows you to write your own messages when necessary. \_\_\_\_\_
- 4 Datalink messages don't use abbreviations. \_\_\_\_\_
- 5 It is possible to communicate by voice and text at the same time. \_\_\_\_\_
- 6 The writer doesn't believe that Datalink should completely replace voice communication. \_\_\_\_\_

- 5 Work in pairs. Discuss the question.

If you had the choice whether or not to use Datalink in your job, what would you decide? Why?

### Vocabulary – Communications

Find bold words in the text that match the definitions.

- 1 spoken messages sent over the radio. \_\_\_\_\_
- 2 a situation where too many people are using a system. \_\_\_\_\_
- 3 the wavelength that is used for radio communication. \_\_\_\_\_
- 4 a place that uses a particular type of system. \_\_\_\_\_
- 5 official permission to do something. \_\_\_\_\_
- 6 the correct order. \_\_\_\_\_
- 7 the maximum that a person or system can deal with. \_\_\_\_\_
- 8 time spent reading or writing. \_\_\_\_\_

### Functional English – Expressing purpose



- 1 Look back at the text to complete the sentences.

- 1 The pilot uses Datalink \_\_\_\_\_ requesting changes of level or speed ...
- 2 ... the controller uses it \_\_\_\_\_ give clearance for level or speed changes and frequency changes.
- 3 Controllers also use it \_\_\_\_\_ manage a larger number of aircraft.
- 4 It allows 'free text' messages, \_\_\_\_\_ the crew can use their own words to deal with non-routine events.

- 2 Complete the sentences using the words and phrases from 1. Note that either *to* or *in order to* can be used in some sentences.

- 1 Commercial aircraft carry a CVR \_\_\_\_\_ recording communications in the cockpit.
- 2 Large aircraft are equipped with TCAS \_\_\_\_\_ reduce the danger of mid-air collisions.
- 3 Flight schools use simulators \_\_\_\_\_ pilots can learn to fly in safe conditions.
- 4 The sterile cockpit rule was introduced \_\_\_\_\_ make sure flight crew keep their concentration during take-off and landing.
- 5 Many pilots prefer to use the EFB rather than paper \_\_\_\_\_ performing flight management tasks.
- 6 Crash investigators rely on the FDR \_\_\_\_\_ analyze an aircraft's behaviour before the accident.
- 7 One part of a glass cockpit display is used for EICAS, \_\_\_\_\_ the crew can keep a constant eye on what the engines are doing.
- 8 The head-up display was developed \_\_\_\_\_ allow pilots to read important data without having to look down.

### Speaking – The perfect technology

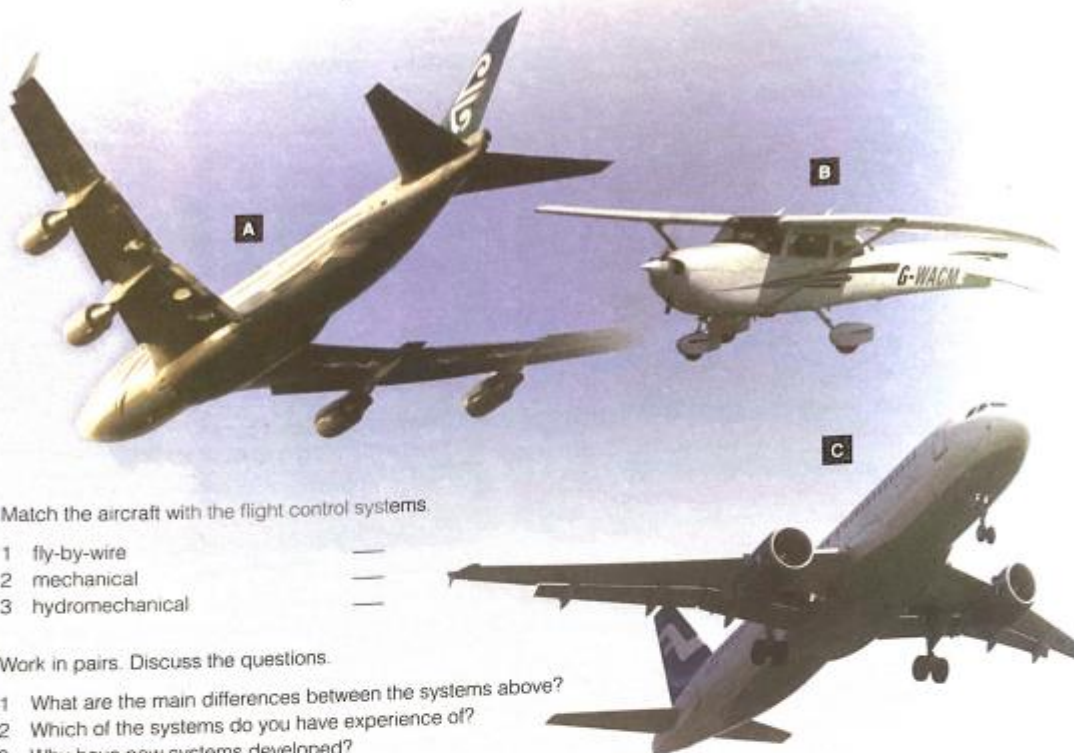
Work in pairs. Imagine a piece of future technology that solves most of the present problems of pilot-ATC communication. Note down your ideas then describe the technology to the class. Think about:

- what it does
- how it is used
- why it improves safety
- how it makes users' work easier





## Section two - Flight control systems



1 Match the aircraft with the flight control systems.

- 1 fly-by-wire
- 2 mechanical
- 3 hydromechanical

—  
—  
—

2 Work in pairs. Discuss the questions.

- 1 What are the main differences between the systems above?
- 2 Which of the systems do you have experience of?
- 3 Why have new systems developed?

3 Complete the sentences with the words below.

override   ultimate control   capability   built-in limits

- 1 If a pilot has \_\_\_\_\_, then he takes the final decision on controlling the aircraft.
- 2 When the flight control system is completely automatic, the pilot's \_\_\_\_\_ is reduced.
- 3 The points that a pilot cannot go past which are part of the flight control system are called \_\_\_\_\_.
- 4 To cancel or change an automatic action, we use the \_\_\_\_\_ function.

4 15 Listen to a discussion between an airline employee and pilot, and answer the questions.

- 1 Why does Jean want Mehmet's opinion about two planes?
- 2 What two aircraft are they talking about?
- 3 Why does Mehmet mention Habsheim and Colombia?
- 4 Which plane does Mehmet think is safer?



5 15 Listen again and underline the correct information.

- 1 Both aircraft use *mechanical* / *fly-by-wire* / *intelligent* flight control systems.
- 2 The Airbus gives final control to the *flight control system* / *pilot* / *first officer*.
- 3 At the Habsheim airshow, the computer didn't allow the pilot to *pull up* / *land correctly* / *retract the air brakes*.
- 4 In Columbia, a computer could have stopped the pilot *flying too quickly* / *keeping the speed brakes on* / *climbing*.

## Functional English – Saying things another way

1 15 Listen again and complete these sentences from the conversation.

- 1 Sorry Mehmet – can you just \_\_\_\_\_ 'fly-by-wire' \_\_\_\_\_?
- 2 I'm not \_\_\_\_\_ mean by 'an override function'.
- 3 In \_\_\_\_\_, the Airbus computer doesn't allow pilots to do any thing dangerous.
- 4 So \_\_\_\_\_, on an Airbus the computer has ultimate control ...
- 5 Can \_\_\_\_\_ an example?
- 6 And there are protections to prevent overspeed. \_\_\_\_\_, it stops the pilot from going faster than is safe.
- 7 To put \_\_\_\_\_, sometimes the aircraft should allow manual control.

- 2 Work in pairs. Take turns to explain how to use a communication system or gadget that you use regularly. When your partner is speaking, ask for explanations as often as possible. Try to use language from 1.

## Vocabulary – Safety

15 Complete the expressions with the verbs from the box, then listen again and check.

reduce stop do allow prevent increase limit make

- |                            |                                |
|----------------------------|--------------------------------|
| 1 _____ anything dangerous | 6 _____ the pilot's capability |
| 2 _____ safety             | 7 _____ manual control         |
| 3 _____ the pilot climbing | 8 _____ the pull-up capability |
| 4 _____ overspeed          | 9 _____ an accident            |
| 5 _____ it safer           |                                |

## Pronunciation – /b/ and /p/

1 16 Listen to eight words. Write A or B, according to the word you hear.

- | A        | B    |     | A        | B      |     |
|----------|------|-----|----------|--------|-----|
| 1 bought | port | ___ | 5 lab    | lap    | ___ |
| 2 bat    | pat  | ___ | 6 peg    | beg    | ___ |
| 3 tab    | tap  | ___ | 7 stable | staple | ___ |
| 4 bet    | pet  | ___ | 8 bit    | pit    | ___ |

2 16 Listen again and repeat the words.

- 3 Take turns to read one word from each line. The person listening must say if they hear A or B.

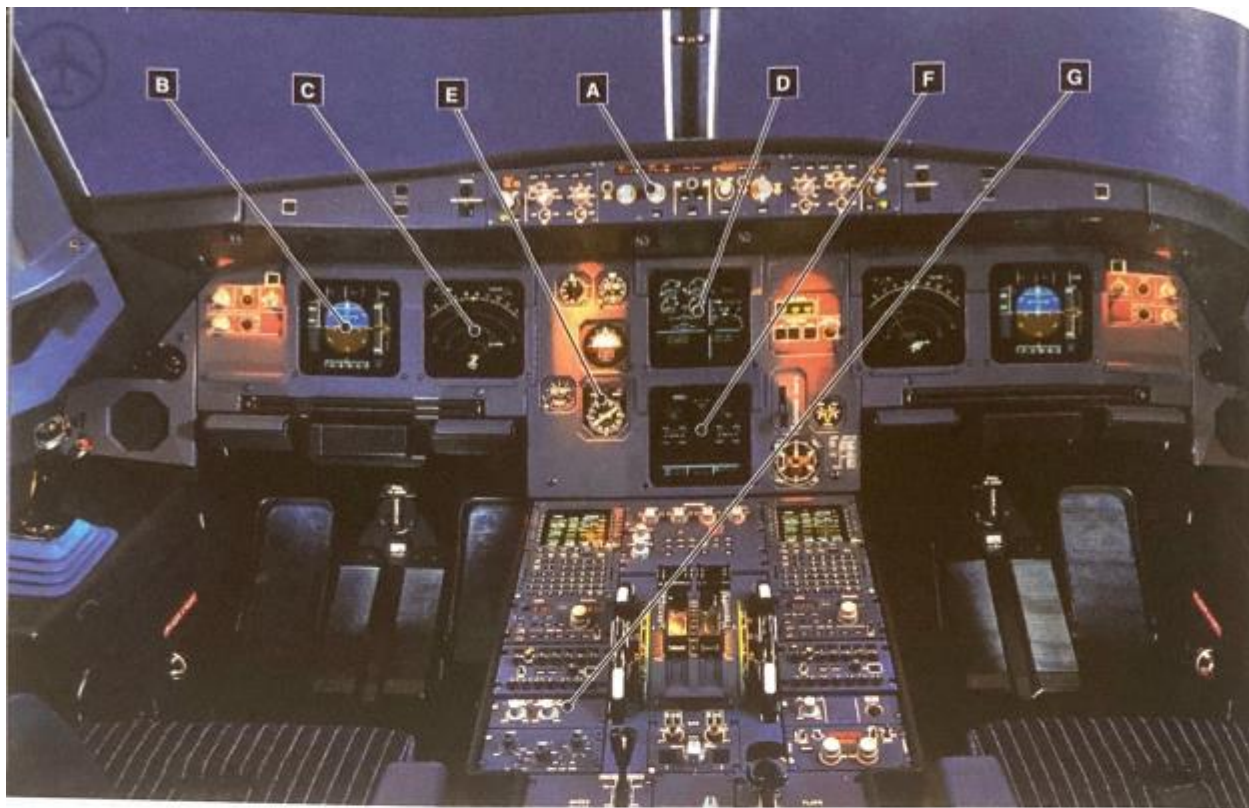
4 Now practise these sentences.

- 1 Boeing and Airbus should use the best of both systems.
- 2 There are protections to stop overspeed.

## Speaking

Work in groups. Discuss the questions.

- 1 In your opinion, is fly-by-wire safer than a conventional mechanical control system?
- 2 In fifty years' time, how do you think flight control systems will be different?



### Section three – Instrument blackout

1 Match the words to the picture. Write a–h.

- 1 upper ECAM (electronic centralized aircraft monitor) display
- 2 lower ECAM display
- 3 autopilot
- 4 radio management panel (RMP)
- 5 primary flight display (PFD)
- 6 secondary flight display
- 7 speed, altitude and attitude display

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

2 Work in groups. Explain the function of each item.

3 Match the two halves of the sentences.

- |                            |                  |
|----------------------------|------------------|
| 1 Let's reboot             | a are down.      |
| 2 We've lost               | b power back.    |
| 3 OK, let's get the system | c back online.   |
| 4 We have a system         | d this out.      |
| 5 The system is            | e the system.    |
| 6 All the flight displays  | f going again.   |
| 7 Let's check              | g is out.        |
| 8 The upper ECAM display   | h the autopilot. |
| 9 We've got                | i failure.       |

4 17 Listen to a conversation from the flight deck of an Airbus A319. Choose a, b or c to complete the sentences.

- 1 There is a problem with the:
  - a fuel system
  - b electrical system
  - c pressurization system.
- 2 The pilots solve the problem by:
  - a reading instructions on the ECAM screen
  - b reading instructions in the manual
  - c getting help from maintenance on the ground.
- 3 The pilots decide to:
  - a continue their original flight plan
  - b land immediately
  - c enter a holding pattern.



5 17 Answer the questions, then listen again and check.

- 1 Why can't the pilots see?
- 2 What equipment on the flight deck fails?
- 3 Why don't ATC respond to the mayday call?
- 4 Where exactly are the instructions?
- 5 How many instructions do the crew follow to solve the problem?

6 Work in pairs. Discuss the questions.

- What equipment at work do you have the most problems with? What is the procedure when it won't work?
- What was the last serious problem you had?

## Functional English – Giving instructions

18 Complete the sentences from the dialogue. Listen and check.

- 1 \_\_\_\_\_ Centre and \_\_\_\_\_ them what's happening
- 2 \_\_\_\_\_ the system.
- 3 \_\_\_\_\_, read the instruction. \_\_\_\_\_ follow it.  
Check it \_\_\_\_\_ you delete it.
- 4 What's the \_\_\_\_\_ instruction?
- 5 First, \_\_\_\_\_ contact ATC so they know our situation.

## Pronunciation – Sentence stress 1

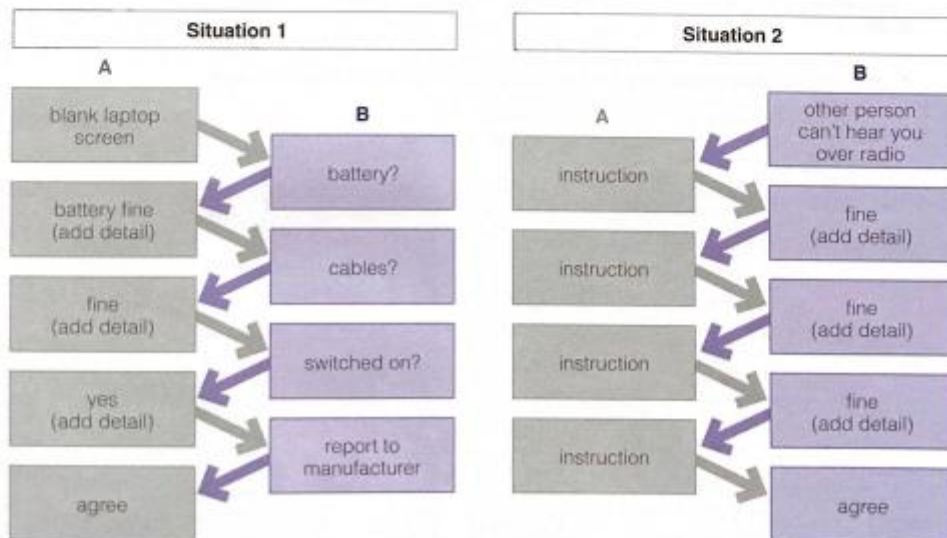
1 18 Listen to the first sentence again. Notice how the words that carry the main meaning of the sentence have the most stress.

Call Centre and tell them what's happening.

Circle the stressed part of the words you think carry the main meaning in the sentences 2–5 in the Functional English section, then listen again and check.

## Speaking

Work in pairs. One of you has a technical problem. A colleague looks at a troubleshooting guide on the Internet, and gives you instructions over the phone. Use expressions from the unit, and add as many details as you can.



## Functional English – Expressing purpose

1 Match the beginnings and endings of the sentences.

- |                                                              |                                                         |
|--------------------------------------------------------------|---------------------------------------------------------|
| 1 Repeat the message slowly so that                          | a restoring it to flying condition.                     |
| 2 We had to dump some of our fuel in order to                | b having all aircraft use this technology in the near f |
| 3 Controllers and pilots use Datalink to                     | c discovering ways to reduce aircraft noise.            |
| 4 Investigations are carried out for the purpose of          | d learning about the latest technologies.               |
| 5 Research is being done with the aim of                     | e expanding its student capacity.                       |
| 6 A Datalink trial was done with a view to                   | f land safely.                                          |
| 7 The training school is raising money with the objective of | g the engine didn't catch fire.                         |
| 8 They're working on the old plane with the intention of     | h avoiding similar incidents in the future.             |
| 9 They switched off the fuel pumps so that                   | i I can understand.                                     |
| 10 We went to the conference for the purpose of              | j communicate with each other.                          |

## Saying things another way

2 Rearrange the words to make sentences.

- is / do / mean / of / order / out / radar / that / the / you?  
\_\_\_\_\_
- clarify / I'm / me / let / say / to / trying / what  
\_\_\_\_\_
- 'unlawful interference' / could / explain / just / means / what / you?  
\_\_\_\_\_
- basically / continue / need / so / heading / to / with / you / your / current.  
\_\_\_\_\_
- do / mean / what / you?  
\_\_\_\_\_
- an / could / me / explanation / give / you?  
\_\_\_\_\_
- sure / I / that / not / I'm / understand  
\_\_\_\_\_
- an / give / can / example / me / you?  
\_\_\_\_\_
- allow / computer / doesn't / fly / in / manually / other / pilot / the / the / to / words  
\_\_\_\_\_
- another / have / it / problem / put / serious / to / way / we / a  
\_\_\_\_\_

## Giving instructions

3 Match the verbs 1–10 with the words or phrases a–j.

- |             |                    |
|-------------|--------------------|
| 1 access    | a an emergency     |
| 2 contact   | b again            |
| 3 declare   | c the ECAM         |
| 4 do        | d the instructions |
| 5 follow    | e going            |
| 6 keep      | f descent          |
| 7 lock      | g ATC              |
| 8 request   | h engine 1         |
| 9 shut down | i the cabin door   |
| 10 try      | j a complete check |



SCHOOL OF ENGLISH

## Vocabulary – Communications



1 Complete the sentences with the words in the box.

speak sequence voice understand text words send routine transmissions congestion  
 communications select pre-formatted responses give message repetition missed deliver

- 1 It is easier to \_\_\_\_\_ directly to a pilot rather than write a \_\_\_\_\_.
- 2 Datalink allows pilots and ATCs to \_\_\_\_\_ text messages for \_\_\_\_\_ communications.
- 3 The problem with \_\_\_\_\_ transmissions is that the speaker may be difficult to \_\_\_\_\_.
- 4 Datalink allows users to create \_\_\_\_\_ messages using their own \_\_\_\_\_.
- 5 Datalink has the potential to make \_\_\_\_\_ safe and fast and to reduce \_\_\_\_\_ on the frequency.
- 6 Datalink users just need to \_\_\_\_\_ from a list of \_\_\_\_\_ text messages.
- 7 Datalink systems \_\_\_\_\_ messages between pilots and controllers.
- 8 It can take time to \_\_\_\_\_ match messages to \_\_\_\_\_ when messages get out of \_\_\_\_\_.
- 9 If controllers \_\_\_\_\_ clear traffic instructions, it reduces the need for \_\_\_\_\_.
- 10 Using a Datalink system could help with the problem of \_\_\_\_\_ voice \_\_\_\_\_.

## Vocabulary from the unit

2 Complete the sentences with the verbs from the unit.

afford allow avoid have help need permit required

- 1 Datalink exists to \_\_\_\_\_ to make communications more efficient.
- 2 Maintenance staff will \_\_\_\_\_ to conform to the new safety requirements whether they like it or not.
- 3 Air traffic controllers and pilots are \_\_\_\_\_ to undergo a medical check-up every two years.
- 4 The officials told the airline that they \_\_\_\_\_ to improve their current safety record immediately.
- 5 Commercial pilots are told to \_\_\_\_\_ flying through military-controlled airspace.
- 6 The airports agency simply can't \_\_\_\_\_ to buy a second police service unit.
- 7 The on-board CCTV cameras \_\_\_\_\_ the pilots to see if there is a problem in the cabin without leaving the cockpit.
- 8 The recent regulations \_\_\_\_\_ all passengers to carry two items of hand luggage.

3 Complete the text with the verbs in the box. Use your dictionary to help you.

adjusted allows developed display eliminate employ  
 features focus needed relies on simplifies utilizes

A glass cockpit is an aircraft cockpit that  
 (1) \_\_\_\_\_ electronic instrument displays.  
 (2) \_\_\_\_\_ relatively recently, glass cockpits  
 are highly sought-after upgrades from traditional  
 cockpits. Where a traditional cockpit (3) \_\_\_\_\_  
 numerous mechanical gauges to (4) \_\_\_\_\_  
 information, a glass cockpit (5) \_\_\_\_\_ several  
 computer displays that can be (6) \_\_\_\_\_  
 to display flight information as (7) \_\_\_\_\_.  
 This (8) \_\_\_\_\_ aircraft operation and navigation  
 and (9) \_\_\_\_\_ pilots to (10) \_\_\_\_\_ only on  
 the most pertinent information. They are also highly  
 popular with airline companies as they usually  
 (11) \_\_\_\_\_ the need to (12) \_\_\_\_\_ a  
 flight engineer.



**12 Use the words in the box to label the maps.**

arrivals hall • baggage claim • boarding gates • check-in • control tower •  
crew room • customs inspection • immigration and quarantine • security check • apron



Note: Landside – where passengers enter and leave the airport by bus, taxi, train, car, etc.  
Airside – where aircraft land, take off, load, unload, etc.

**13 Answer the questions.**

- 1 Where does 'airside' begin when you are departing?
- 2 Where does 'landside' begin when you arrive?
- 3 Where do you sometimes have to open your luggage?
- 4 Where do agents carry out a final ticket check?
- 5 Where do the aircraft park?



**14 Listen to five conversations. Match each conversation to the location where it is taking place.**

| Conversation | Location                  |
|--------------|---------------------------|
| 1            | a at immigration          |
| 2            | b on a returning aircraft |
| 3            | c on a departing aircraft |
| 4            | d at security             |
| 5            | e in the crew room        |

**15 Listen again. Which conversation includes:**

- |                               |                         |
|-------------------------------|-------------------------|
| a cabin cleaning staff? _____ | d a new recruit? _____  |
| b an entire cabin crew? _____ | e catering staff? _____ |
| c a returning pilot? _____    |                         |

**16 Read the statements and match them with the jobs in the box. Then give the main location for each job, using the map on page 10.**

apron service staff • baggage handler • check-in counter agent  
• field operations staff • gate agent

I work landside. I check passengers' passports and tickets, and give them their boarding passes. I don't have any direct communication with the cabin crew.

1 job: \_\_\_\_\_  
main location: \_\_\_\_\_

I do a final check of passports and boarding passes airside before passengers board. I tell the cabin crew when everyone's boarded and also if any passengers who checked in are missing.

2 job: \_\_\_\_\_  
main location: \_\_\_\_\_

I work airside. I drive a truck and refuel aircraft. I don't talk with the cabin crew, but I need to communicate with the pilot.

3 job: \_\_\_\_\_  
main location: \_\_\_\_\_

I have a good view of the whole field. I communicate directly with pilots, but I never talk with the cabin crew unless there's a very serious emergency onboard.

4 job: \_\_\_\_\_  
main location: \_\_\_\_\_

I work airside, putting luggage in the plane. If the cabin crew need to 'gate check' an item, for example a push chair, they give it to me and I put it in the baggage hold.

5 job: \_\_\_\_\_  
main location: \_\_\_\_\_

**17 Work with a partner. Guess the person or place from the description.**

**PARTNER FILES**

Partner A File 1, p. 70  
Partner B File 9, p. 72

**USEFUL PHRASES**

**Talking about people and places**

This is the place where you open your luggage.  
This is a person who is responsible for helping the pilot.  
It's used for crew meetings.

He/She's responsible for the entire aircraft.  
It's where you go to collect your luggage.  
It's who you speak to when you need information about ramp services.

Read the text and answer the questions.

### Anya Bukowski

I had friends from university who worked for airlines. They loved their jobs, so I wanted to work for an airline, too. I started in reservations, then moved to the airport and worked in ground operations, baggage, ticketing, gate check-in, and ramp. The next natural step was to fly. I was lucky enough to have an interview and get the job.

My initial training was about eight weeks. The course included service procedures for serving meals, security, emergency procedures, medical emergency procedures, CPR qualification, and domestic and international customer service procedures. The main emphasis was on emergency and aircraft evacuation procedures. To graduate, I had to evacuate a full aircraft in ninety seconds in an emergency situation!

I love to travel and see new places. I really made good use of my layover time in cities all over the world. The flexibility of the job is a great bonus. There aren't many jobs that allow you such freedom to fit your work schedule around your personal schedule. The greatest challenge is trying to live a normal life with a job and working hours



that aren't normal. The realities of a flight attendant job aren't often discussed. It's a hard, demanding job. You work long hours serving the needs of the public. You're away from home and family and friends and usually, especially as a new flight attendant, working nights, holidays, and weekends. You get tired and jet-lagged and sometimes hungry and not able to get a meal. The most important thing is to take care of yourself. Always travel with something to do – a book, knitting. Always have a snack in your bag in case you don't get a meal. If you work out, have clothes and shoes with you so you can go for a walk or use the hotel gym. Stay in touch with family and friends – hotels usually have computers and/or wireless. Sleep when you can, even if not during your normal sleeping hours.

#### OVER TO YOU

- Do you know anyone who works in the airline industry? How do they feel about their job?
- What do you think of Anya's tips in the final paragraph?
- What will you take with you when you travel?

# STARTER

Match the pre-flight tasks to the pictures. Then suggest the order in which they are carried out.



- 1 Check all the blankets, comfort kits, headphones, newspapers, etc. are loaded.
- 2 Check emergency equipment is working and in place.
- 3 Attend the pre-flight briefing.
- 4 Check all the food and galley equipment is loaded.
- 5 Carry out a security check of the aircraft.

☐  
☐  
☐  
☐  
☐


## 1 Listen. Complete the information.

| Who is talking?                                      | Conversation | Have they met before? |
|------------------------------------------------------|--------------|-----------------------|
| a Captain and first officer to cabin crew supervisor | _____        | _____                 |
| b Flight attendant to flight attendant               | _____        | _____                 |
| c Purser to flight attendants                        | _____        | _____                 |

Look at the pictures. Match descriptions a-c with the pictures.

- a Purser to cabin crew pre-flight briefing
- b Flight crew to cabin crew pre-flight briefing
- c Passenger pre-flight briefing

☐  
☐  
☐




**7 Listen to five people speaking in a pre-flight briefing. Match each conversation with a main topic.**

**Conversation**

**Topic**

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

- a a very young child on board
- b work responsibilities in economy class
- c a disabled passenger
- d safety equipment
- e work responsibilities in business class

**8 Listen again. Answer the questions.**

- 1 Who is responsible for door 3L?
- 2 How many masks are with each oxygen cylinder?
- 3 How old is the baby?
- 4 Which door is the senior crew member responsible for?
- 5 Which seat is given to the disabled passenger?

**9 Each conversation in exercise 7 is a response to a question. Put the words in the right order to make the original questions.**

- 1 after and are before duties take-off What your ?

\_\_\_\_\_

- 2 aircraft are Could cylinders how many on oxygen tell there this us you ?

\_\_\_\_\_

- 3 any babies board children got Have on or very we young ?

\_\_\_\_\_

- 4 business class in is Who working ?

\_\_\_\_\_

- 5 any got Have other passengers requirements special ?

\_\_\_\_\_

**10 The cabin crew often ask questions during pre-flight briefings. Use the words in the box to complete the questions.**

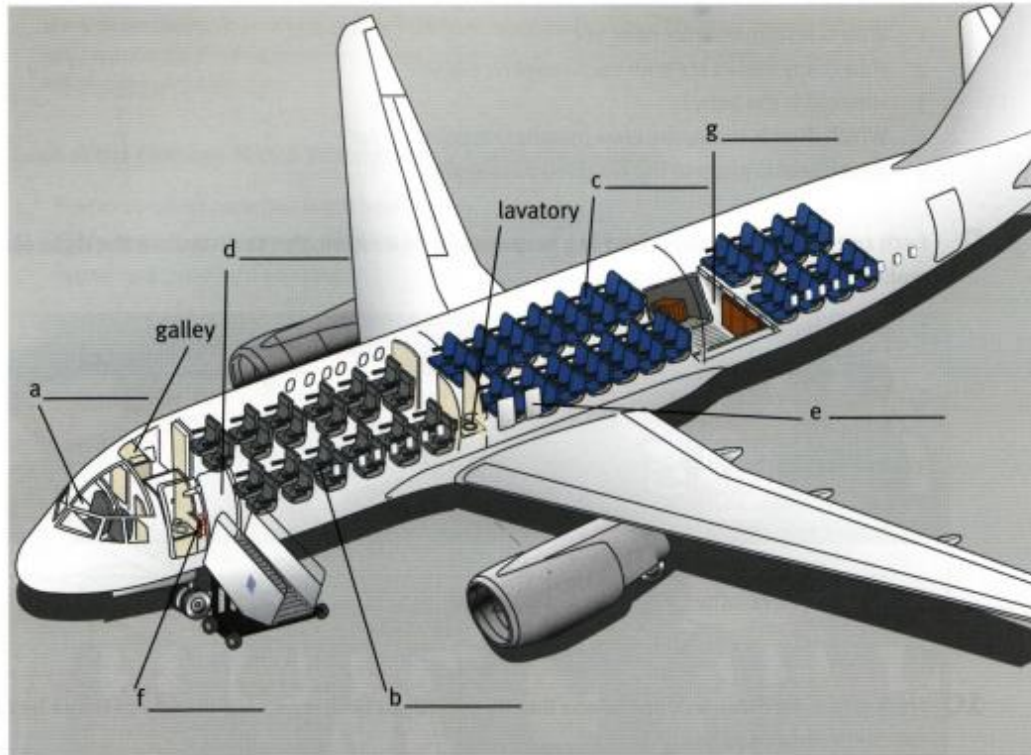
are • can • long • many • much • what • when • where

- 1 How \_\_\_\_\_ children are on board?
- 2 How \_\_\_\_\_ is the stop over?
- 3 \_\_\_\_\_ will the wheelchair go?
- 4 \_\_\_\_\_ will we arrive in Moscow?
- 5 How \_\_\_\_\_ information do we have?
- 6 \_\_\_\_\_ time will the passengers board the aircraft?
- 7 \_\_\_\_\_ there any other passengers with special needs?
- 8 \_\_\_\_\_ you tell me what to do?

**11 Work with a partner. Ask and answer questions about the flight.**

**12 Match the words to make areas on an aircraft.**

- |             |           |
|-------------|-----------|
| 1 cargo     | a cabin   |
| 2 emergency | b class   |
| 3 first     | c deck    |
| 4 flight    | d exit    |
| 5 overwing  | e station |
| 6 economy   | f hold    |
| 7 crew      | g hatch   |



**13 Now label the areas on the aircraft in the picture with the words from exercise 12.**

**14 Complete the sentences with words from exercise 12.**

- 1 Sterile \_\_\_\_\_ rules must be observed below 10,000 feet.
- 2 Every available \_\_\_\_\_ is used in an evacuation.
- 3 The \_\_\_\_\_ provides a base for cabin crew during take-off and landing.
- 4 All baggage is security-checked before being loaded into the \_\_\_\_\_.
- 5 Passengers in \_\_\_\_\_ pay extra for more leg room and an improved meal service.
- 6 The \_\_\_\_\_ is an extra exit for use in an emergency evacuation.
- 7 Most passengers fly in the \_\_\_\_\_ cabin.



# FIRE

## Section one - Fire risk

1 Work in pairs. Discuss the questions.

- 1 What do you think is the most common cause of fires on board planes?
- 2 What incidents caused by fire have you heard about?
- 3 What training have you received for dealing with fires?

2 You are going to read dangerous goods incident reports from the Australian Civil Aviation Authority. Read the stories, and match each incident with a story. Write A-H.

In which incident:

- 1 was fire started by metal touching metal? \_\_\_\_\_
- 2 did someone try to illegally ship explosive powder? \_\_\_\_\_
- 3 did the movement of the aircraft cause a fire? \_\_\_\_\_
- 4 did leakage cause a dangerous chemical reaction? \_\_\_\_\_
- 5 was a fire discovered after landing? \_\_\_\_\_
- 6 did heat from a chemical reaction start a fire? \_\_\_\_\_
- 7 did an explosion in the hold cause a plane to crash? \_\_\_\_\_
- 8 did a passenger accidentally bring a dangerous item on board? \_\_\_\_\_

## DANGEROUS GOODS INCIDENTS REPORT

**A** On arriving at the destination, one passenger's bag had smoke coming out of it. A check by the airline revealed that a cigarette lighter had ignited and burned some of the clothing.

**B** An aircraft crashed due to a flammable liquid – possibly perfume – leaking in a passenger's stowed baggage. An ignition source set light to the liquid, causing an explosion.

**C** A courier driver arrived at a freight-forwarder's premises and asked to pick up a large crate which contained an explosive material in the form of a black powder. The owner knew it was prohibited, and was already in trouble with the police for collecting a briefcase full of fireworks from the airport two days earlier.

**D** Federal police were called to a baggage carousel at an international airport to check an unclaimed bag. An inspection of the contents revealed a fire extinguisher and a packet of sandwiches. It was finally discovered that a passenger had accidentally taken a taxi driver's bag from the car and didn't notice that he checked in an additional bag.

**E** A shipper consigned a wet-cell battery, undeclared as dangerous goods. Before consignment he emptied the acid out of the battery. But he also placed a brake cable in the same package. On arrival of the aircraft, smoke from the package set off a smoke detector because the brake cable had caused a short circuit of the terminals.

**F** In a cargo hangar, a container ignited. One item of cargo in the container was an oxygen generator, undeclared as dangerous goods. These devices produce oxygen by chemical reaction, which creates significant heat.

**G** Undeclared dangerous goods described as 'laundry products' contained a mixture of a chemical solution and corrosive solids. It was loaded on its side in the cargo compartment and the liquid leaked onto the solids, causing a very hot fire.

**H** While unloading baggage, ground staff noticed smoke rising from a suitcase. Investigation revealed that a quantity of matches had ignited due to vibration in the hold.

**DANGER >>>> DANGER >>>>**





3 Decide if the sentences are true or false. Write *T* or *F*. Then read the text again to check.

- |                                                                       |       |
|-----------------------------------------------------------------------|-------|
| 1 In incident A, the cigarette lighter caught fire first.             | _____ |
| 2 In incident B, a spark may have set the perfume alight.             | _____ |
| 3 In incident C, the courier driver had fireworks in his truck.       | _____ |
| 4 In incident D, the passenger was a taxi driver.                     | _____ |
| 5 In incident E, the shipper hadn't taken any precautions.            | _____ |
| 6 In incident F, heat from the aircraft ignited oxygen.               | _____ |
| 7 In incident G, the goods were incorrectly loaded in the hold.       | _____ |
| 8 In incident H, ground staff immediately knew the cause of the fire. | _____ |

### Vocabulary – collocations related to fire

Match a word on the left with a word on the right to make collocations from the incident reports.

- |             |                |
|-------------|----------------|
| 1 cigarette | a circuit      |
| 2 fire      | b reaction     |
| 3 corrosive | c liquid       |
| 4 ignition  | d extinguisher |
| 5 chemical  | e solids       |
| 6 smoke     | f lighter      |
| 7 flammable | g source       |
| 8 dangerous | h material     |
| 9 explosive | i goods        |
| 10 short    | j detector     |

### Functional English – Obligation, prohibition and permission

1 01 Listen to a spokeswoman from the Australian CAA commenting on the dangerous goods reports. Underline the correct information.

- Many / Not many passengers fly with dangerous goods by mistake.
- Correctly-declared goods cause hardly any / most fires.
- Airport staff should possibly be better trained in dealing with fires / dangerous goods.

2 01 Listen again and complete the sentences.

- Most passengers know what they \_\_\_\_\_ and \_\_\_\_\_ bring into an airport.
- It's obvious that you \_\_\_\_\_ bring anything explosive on board.
- Although some people still try, even when they know it's \_\_\_\_\_.
- The owner of the black powder knew he wasn't \_\_\_\_\_ transport it without declaring it as dangerous goods.
- You \_\_\_\_\_ declare dangerous goods or you are \_\_\_\_\_.
- It's difficult to understand, for example, how someone \_\_\_\_\_ chemical solutions and corrosive solids on board.



### Speaking

Work in pairs. You are going to roleplay a customs official explaining rules about prohibited goods to a passenger. Student A look at p 105. Student B look at p 109.



## Section two - Smoke-jumper

1 Below are some words and phrases for describing fires. Put each one into the correct column.

spread    contain a fire    extinguish a fire    set something on fire    ignite    put out a fire  
go out    burn    spray fire-retardant liquid    smoulder    catch fire    explode

| start                 | continue | stop |
|-----------------------|----------|------|
| set something on fire |          |      |
|                       |          |      |

2 Work in pairs. Look at the pictures. Tell the story. Use the words in exercise 1.



3 Work in pairs. Look at the photographs of the aerial fire service in action at the top of the page. Discuss the questions.

- 1 In what type of environment would they be needed?
- 2 How do they tackle fires from the air and on the ground?

4 🎧 02 Listen to a radio feature about an aerial fire service.  
What are the jobs of the three people who talk to the radio presenter?



5 🎧 02 Listen again and underline the correct information.

- 1 This aerial fire service operates in *Mongolia / Siberia*.
- 2 Wild fires are usually caused by *natural phenomena / human activity*.
- 3 Wild fires start because *the forest is dry / people are careless*.
- 4 *Summer / Autumn* is the busiest time of year.
- 5 In order to make a safe drop, the pilot *sometimes has to make two or three circuits / must keep upwind of the fire*.
- 6 For the smoke-jumper, *extinguishing the fire / finding a way out of the forest* is the most difficult thing.

### Functional English – Orders and requests

1 🎧 03 Complete the sentences from the radio feature, then listen and check.

- |                          |                                                    |
|--------------------------|----------------------------------------------------|
| 1 _____ your full kit.   | 4 _____ us how fires are caused?                   |
| 2 _____ for inspection.  | 5 _____ about your work on the ground?             |
| 3 _____ your work to us? | 6 Jumpers, _____ talk! _____ ready .... drop zone! |

2 Work in pairs. Discuss the questions.

- 1 Which sentences sound polite? Why?
- 2 Would you use similar expressions and intonation in your language to make a polite request?

3 🎧 03 Listen again and repeat the sentences.

4 We often use *get* in place of verbs of movement in orders. Make the following polite requests into orders with *get*.

- |                                                        |                            |
|--------------------------------------------------------|----------------------------|
| 1 Could you exit the runway, please?                   | <u>Get off the runway!</u> |
| 2 Would you bring me some water, please?               | _____                      |
| 3 Could you move away from the aircraft, please?       | _____                      |
| 4 Could you leave the aircraft as quickly as possible? | _____                      |
| 5 Can you find a fire extinguisher, please?            | _____                      |
| 6 Would you put on your mask, please?                  | _____                      |

5 Work in groups. One student make a series of orders and polite requests in the same way. Other students obey polite requests, but not orders.

### Speaking

Work in pairs. Discuss the questions.

- 1 Do you have an aerial firefighting service in your country? Why / Why not?
- 2 Would you like to work in aerial firefighting operations? Why / Why not?



## Section three – On-board fire

- 1 Complete the sentences with the verbs below.

come loose    set off    reset    overheated    trips    short-circuit    overloaded

- The fan has \_\_\_\_\_ – there's smoke coming from it.
- If anyone smokes in the toilet, it will \_\_\_\_\_ the smoke detector.
- This outlet is \_\_\_\_\_, so we need to unplug a couple of things.
- Some wiring has \_\_\_\_\_ and needs securing in place.
- Water has got into the wires and caused the system to \_\_\_\_\_.
- If the circuit-breaker \_\_\_\_\_, you need to \_\_\_\_\_ it.

- 2 Work in small groups. When a fire is discovered during a flight, is it more important to fight the fire or land the plane? Why?

- 3 04,05,06 Listen to intra-cockpit and radio-telephony communications from a B747 in the cruise phase of flight. Tick (✓) the things that the crew do.

- put on their oxygen masks ☐
- inform air traffic control about the problem ☐
- investigate the cause of the fire ☐
- try to extinguish the fire ☐
- make an announcement to passengers ☐
- initiate an emergency descent ☐

- 4 04,05,06 Listen again and answer the questions.

- How do the crew first realize there is a problem?
- What does the pilot think the cause could be?
- Where is the smell coming from?
- How do they deal with the passengers who feel uncomfortable?
- What two possible causes does the cabin crew manager mention?
- What equipment does the cabin crew manager put on before investigating again?



### Pronunciation – /l/ and /r/

- 1 07 Listen to six words. Write A or B, according to the word you hear.

| A        | B      |     |
|----------|--------|-----|
| 1 right  | light  | ___ |
| 2 fright | flight | ___ |
| 3 frame  | flame  | ___ |
| 4 wrong  | long   | ___ |
| 5 road   | load   | ___ |
| 6 arrive | alive  | ___ |

- 2 07 Listen again and repeat the words.

- 3 Work in pairs. Take turns to read one word from each line. The person listening must say if they hear A or B.

- 4 Now practise these sentences.

- The right light is broken.
- We had a fright when the flight landed heavily.
- The flame came from the air frame.
- The pilot flying took a wrong turn.
- They'll transport the load by road.
- All systems must be upgraded or replaced.
- I was glad to arrive alive.
- File the report on the fire.

## Functional English – Identifying and responding to problems



Complete the extracts from the dialogue with the words below. Then listen and check.

1 🎧 05

happened I'll try what overheated I'll ask problem where's tripped

PF (1) \_\_\_\_\_ was that? This isn't right.

PNF What's (2) \_\_\_\_\_?

PF Three circuit-breakers have (3) \_\_\_\_\_. They're showing a (4) \_\_\_\_\_.

PNF (5) \_\_\_\_\_ the problem?

PF In one of the washrooms. Maybe the fan (6) \_\_\_\_\_.

PNF (7) \_\_\_\_\_ the cabin crew manager to look into it.

PF (8) \_\_\_\_\_ and reset the circuit-breakers.

2 🎧 06

trouble why smoke's have to can't initiating

C I (1) \_\_\_\_\_ get back there.

PNF (2) \_\_\_\_\_ not?

C The (3) \_\_\_\_\_ too heavy.

PNF Are the passengers OK?

C People are starting to have (4) \_\_\_\_\_ breathing.

PNF We (5) \_\_\_\_\_ go down.

PF (6) \_\_\_\_\_ an emergency descent.



### Speaking

- 1 The flow chart shows the pattern of communication in the two dialogues in the Functional English section. Complete the boxes with the appropriate statement. The first one has been done for you.

Say what the problem is

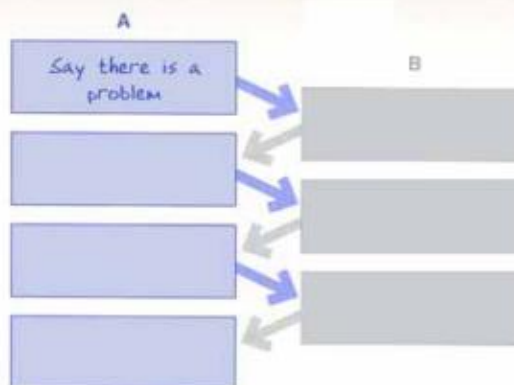
Announce action (x2)

Request clarification

Say there is a problem

Request further clarification

Give more information



- 2 Work in pairs. Use the prompts to make dialogues based on the flow chart pattern. Invent your own details.

- There is a smell of burning plastic in the galley.
- The floor in business class feels hot.
- There are sparks under the instrument panel.
- There is smoke coming from a bag in an overhead locker.

## Section four – Language development

### Functional English – Obligation, prohibition and permission

1 Complete the sentences with the words and phrases in the box. In some cases, more than one answer is possible.

breaking the law   can and can't   have to   illegal   let  
mustn't   not allowed   permitted   prohibited   required

- 1 It is \_\_\_\_\_ to smoke in the washroom.
- 2 Passengers are not \_\_\_\_\_ to enter the cockpit at any time.
- 3 You are \_\_\_\_\_ to leave your seat during take-off and landing.
- 4 Carrying anything explosive onto a plane is \_\_\_\_\_.
- 5 The cabin crew \_\_\_\_\_ inform passengers of safety procedures in the event of an accident at the beginning of every flight.
- 6 All passengers flying to and from the US are \_\_\_\_\_ to carry a machine-readable passport.
- 7 The man was not \_\_\_\_\_ on board because he appeared to be carrying suspicious goods in his hand luggage.
- 8 It is \_\_\_\_\_ to fly a plane without a license.
- 9 Hand luggage to be taken into the cabin \_\_\_\_\_ contain any dangerous or flammable items.
- 10 Flight regulations clearly state what passengers \_\_\_\_\_ bring onto a plane.

### Functional English – Orders and requests

2 Rearrange the words to make orders.

- 1 immediately / fasten / passengers / seatbelts / tell / the / their / to  
\_\_\_\_\_
- 2 don't / hot / it / it's / so / touch / very  
\_\_\_\_\_
- 3 tell / severe / we / passenger / MedLink / have / and / burns / call / them / a / with  
\_\_\_\_\_
- 4 about / and / contact / emergency / problem / services / tell / the / the / them  
\_\_\_\_\_
- 5 engine / down / two / number / shut  
\_\_\_\_\_
- 6 aerodrome / inform / nearest / of / pilot / the / the  
\_\_\_\_\_
- 7 from / passengers / stop / the / the / using / washroom  
\_\_\_\_\_
- 8 as / as / get / of / out / plane / possible / quickly / the  
\_\_\_\_\_

3 Make the following orders into polite requests. use the verbs in brackets.

- 1 Get me some water! \_\_\_\_\_ (bring)
- 2 Quick! Get a fire extinguisher! \_\_\_\_\_ (find)
- 3 Get off the runway! \_\_\_\_\_ (exit)
- 4 Get your seatbelts on! \_\_\_\_\_ (fasten)
- 5 Get on your masks! \_\_\_\_\_ (put on)
- 6 Get ATC on the radio! \_\_\_\_\_ (contact)
- 7 Find the checklist for fire! \_\_\_\_\_ (look for)
- 8 Tell me more! \_\_\_\_\_ (give)
- 9 Don't bother the pilot! \_\_\_\_\_ (disturb)
- 10 Tell me where the nearest aerodrome is. \_\_\_\_\_ (let know)

## Identifying and responding to problems

4 Find and correct the mistake in each sentence.

- 1 What is happened?
- 2 Show me where is the problem?
- 3 What shall we doing about it?
- 4 Are OK the passengers?
- 5 I try and reset them.
- 6 I'll asking the cabin crew manager to look into it.
- 7 I'll contact ATC and declare for an emergency.
- 8 Let get the passengers' masks on.

has

## Vocabulary – collocations related to fire

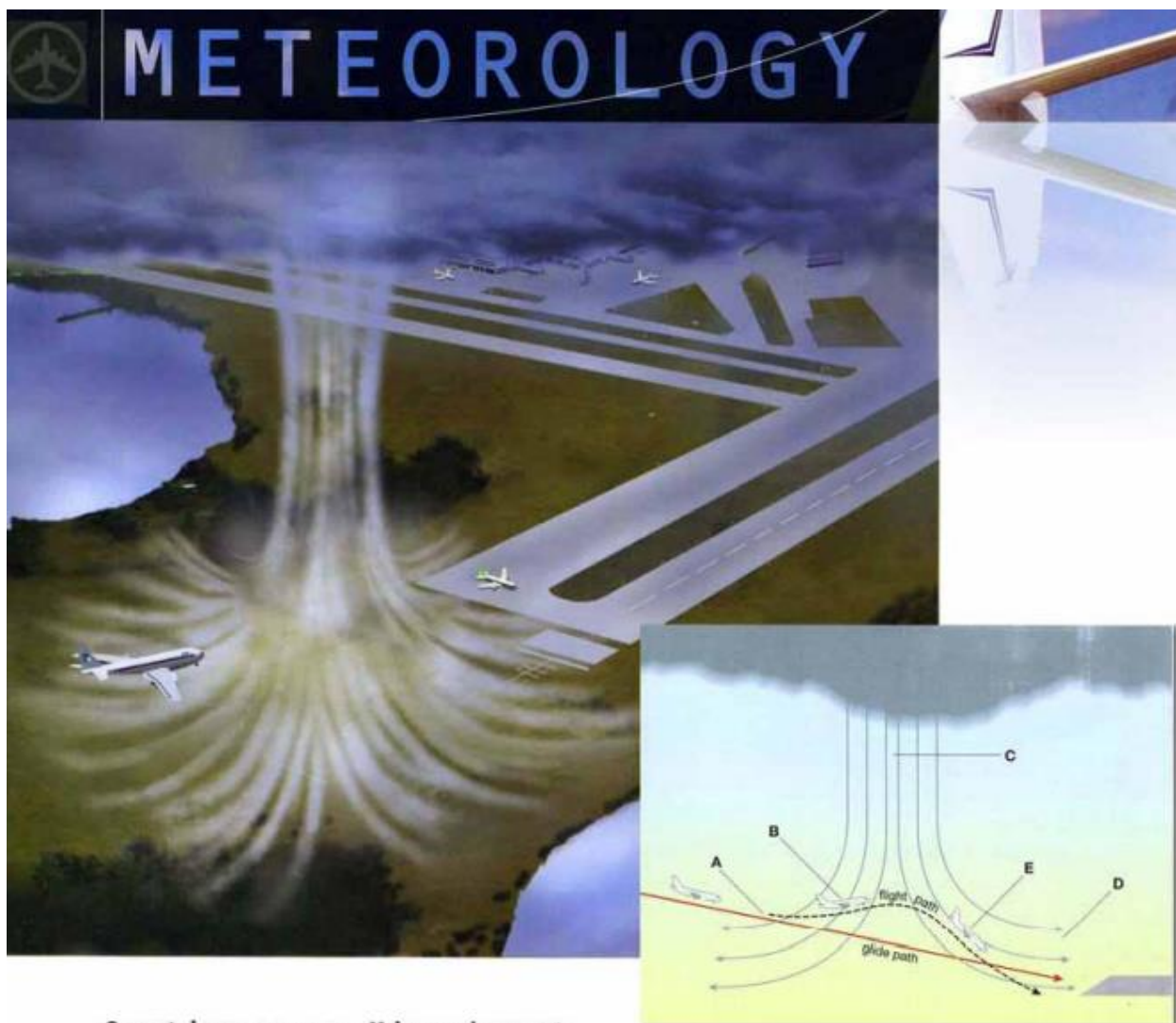
1 Match the beginnings with endings to make sentences.

- |                                                                         |                                                                      |
|-------------------------------------------------------------------------|----------------------------------------------------------------------|
| 1 The controllers alerted the ...                                       | a blaze at San Francisco airport.                                    |
| 2 One of the tyres caught ...                                           | b plastic near his seat.                                             |
| 3 It took eleven firefighters to contain ...                            | c engulfed the plane just seconds after everyone had been evacuated. |
| 4 The flight attendant tried his best to extinguish ...                 | d the small fire in the washroom.                                    |
| 5 The pilots could see ...                                              | e extinguishers on every plane.                                      |
| 6 The emergency fire service sprayed the empanage of the plane with ... | f fire on landing.                                                   |
| 7 Two fire services were involved in attempting to tackle the ...       | g the fire on the runway.                                            |
| 8 A passenger thought he could smell burning ...                        | h smoke coming from under the cockpit door.                          |
| 9 There should be several fire ...                                      | i emergency services as soon as they realized there was a problem.   |
| 10 The flames completely ...                                            | j foam.                                                              |

## Vocabulary from the unit

2 Rearrange the letters in the words from the unit to match the definitions.

- |                            |                                                                                    |
|----------------------------|------------------------------------------------------------------------------------|
| 1 <b>adeprs</b>            | (of fire) to gradually affect a larger area                                        |
| 2 <b>est fof</b>           | to cause something to operate or to explode                                        |
| 3 <b>delmorsu</b>          | to burn slowly, producing smoke but no flames                                      |
| 4 <b>egliint</b>           | to start to burn, or to make something start to burn                               |
| 5 <b>horst cciirtu</b>     | a bad electrical connection that prevents a piece of equipment from working        |
| 6 <b>efir gruinheetsix</b> | a foam-filled container that is used to put out a fire                             |
| 7 <b>xegnoy akms</b>       | an object that fits over your face and is used for helping you to breathe normally |
| 8 <b>oehs</b>              | a very long tube that water can flow through                                       |



## Section one – Microburst

1 Match the descriptions below with letters A–E in the diagram.

- 1 Tailwind increases
- 2 The aircraft has increased lift
- 3 Headwind increases
- 4 The aircraft suddenly loses lift and air speed
- 5 A downdraft of cold air

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

2 Read the text and decide if the sentences are true or false. Write *T* or *F*.

- 1 Flight 191 landed on a short runway.
- 2 The problem was caused by fast-moving cold air.
- 3 Ted Fujida piloted a plane through a microburst.
- 4 American pilots found a method for surviving a microburst.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

# Microbursts – a battle against nature

As Delta Airlines Flight 191 approached Dallas-Fort Worth airport on a hot summer's day in 1985, it flew into a thunderstorm. The storm quickly got worse, and the crew noticed that something extremely strange was beginning to happen. At 800 ft, they suddenly began to lose control of the plane's speed, which increased to 173 kt without any throttle. Just as suddenly, the speed dropped to 119 kt, even though the pilot was applying full power. To prevent a stall, the pilot pushed the nose down. The plane could not gain height, and came down far short of the runway. The freak weather that brought down Flight 191 was a microburst. Millions of dollars have been spent on pilot training and detection systems to ensure that planes can now survive this dangerous phenomenon.

A microburst is essentially a shaft of fast-moving cold air that hits the earth from high up in the atmosphere, then explodes upwards and outwards. A low-flying plane encountering this would fly first into a strong headwind, then a downdraught, then a fierce tailwind, which forces it to lose height rapidly. A microburst is caused when a thunderstorm carries massive amounts of wet warm air high into the atmosphere on its strong updraughts. This air then cools and becomes heavier, causing it to plunge to earth.

The first person to suspect the existence of this phenomenon was a researcher called Ted Fujita, who was flying over a Siberian forest in 1972 when he observed how tens of thousands of trees had been blown down in a pattern radiating outwards from a single point. He knew that the

cause could not be a massive tornado, as the crew said, because a tornado follows a path. Research into the phenomenon began, but progress was quite slow until the 80s, when research by NASA gave us an understanding of how microbursts are caused, and it was recognized that even a large aircraft could not survive them.

The survival technique that pilots are taught today was developed by two American pilots in the 1980s. The required action goes against natural instincts – apply full power and pull the nose up at least 15° until the stall warning is triggered, and then hold on through the turbulence. Without doubt, the insight and determination of the people who first recognized and studied microbursts thirty years ago has saved the lives of thousands of passengers.

## 3 Read the text again and answer the questions.

- 1 What effect did the microburst have on the speed of flight 191?
- 2 How did the crew try to avoid stalling the aircraft?
- 3 In your own words, how is a microburst formed?
- 4 What effects does a microburst have on a low-flying aircraft?
- 5 How did Ted Fujita know a tornado did not damage the forest?
- 6 How do pilots today deal with microbursts?

## Functional English – Changing the strength of adjectives

We can use adverbs to make an adjective weaker or stronger.

... something **extremely** strange was beginning to happen.  
... progress was **quite** slow ...

Or we can use an extreme adjective.

a **massive** tornado

## 1 Number these words or expressions from 1 (weakest) to 6 (strongest).

- really / absolutely huge
- quite / fairly / pretty big
- huge
- very / really big
- not big at all
- extremely big

## 2 Underline the best adjective to complete the sentences.

- 1 It's very / absolutely freezing in winter in Siberia, and you need a fur hat.
- 2 Libya is extremely / not at all hot for most of the year, which can cause overheating problems.
- 3 It gets quite / extremely cold at night, but the temperature never falls below freezing.
- 4 You get some really / very incredible storms in the mountains.
- 5 The runway can be absolutely / pretty slippery, even after the snow is cleared.

## Speaking



Work in groups. Talk about the most extreme weather conditions you have experienced. Talk about:

- when and where they happened
- how bad the weather was
- what happened
- what happened at the end of the story
- any developments / results of this.



## Section two – Airport disruption

1 Match the words below with the pictures of weather conditions.

thunderstorm —  
gale —  
monsoon —  
fog —  
hurricane —  
hailstorm —



2 Work in pairs. Discuss which weather type(s) you could find in:

- 1 a tropical area
- 2 a northern coastal area
- 3 an inland area.

3 Match the words with the definitions.

- |              |                                                                      |
|--------------|----------------------------------------------------------------------|
| 1 visibility | a (of a surface) difficult to move on because it is wet or smooth    |
| 2 slippery   | b used to describe weather that keeps changing                       |
| 3 overcast   | c how far you can see, depending on weather conditions               |
| 4 sticky     | d used to describe weather that makes you feel hot and uncomfortable |
| 5 unstable   | e completely cloudy, so that you cannot see the sun                  |

4 08 Listen to four weather descriptions. Number the places on the map in the order you hear them.



5 08 Listen again and make notes to complete the chart.

|                 | Bristol             | Almaty | Kerala |
|-----------------|---------------------|--------|--------|
| Winter          | overcast<br>drizzle |        |        |
| Summer          |                     |        |        |
| Prevailing wind |                     |        |        |
| Warning         |                     |        |        |



## Vocabulary – Weather words

Match the adjectives with the nouns that they describe.

good (x2) humid mild stormy (x2) rough smooth overcast clear strong light (x2) heavy poor freezing

- |                      |       |   |       |   |       |   |       |
|----------------------|-------|---|-------|---|-------|---|-------|
| 1 weather conditions | humid | / | _____ | / | _____ | / | _____ |
| 2 an approach        | _____ | / | _____ | / | _____ | / | _____ |
| 3 the sky            | _____ | / | _____ | / | _____ | / | _____ |
| 4 wind               | _____ | / | _____ | / | _____ | / | _____ |
| 5 rain               | _____ | / | _____ | / | _____ | / | _____ |
| 6 visibility         | _____ | / | _____ | / | _____ | / | _____ |

## Functional English – Results and consequences

09 Listen and complete the sentences from the listening.

- \_\_\_\_\_ of the warm Atlantic winds, the temperature remains quite high.
- Aircraft usually depart on the south-west heading \_\_\_\_\_ prevailing south-westerly winds.
- The airport operator has just resurfaced the runway, and \_\_\_\_\_ this sometimes there can be standing water.
- This \_\_\_\_\_ quite long delays as aircraft have to enter holding patterns.
- It can \_\_\_\_\_ be difficult to predict the heavy rains, and flooding can happen at any time.
- \_\_\_\_\_ consequence, pilots need to be careful just before the monsoon.

## Listening – Weather forecast

- Look at the weather forecast for Bristol. Discuss what effect the weather will have on flights into and out of Bristol over the next 12 hours. Try to use expressions from the exercise above.

- 10 Listen to a briefing from the ATC shift supervisor and underline the correct information.

- Controllers working the *approach / departure* areas are going to be busy.
- The *evening / night* shift is going to be quieter than the *evening / night* shift.
- The *upper airspace / apron* is going to be very quiet over the next 12 hours.
- It's going to be difficult for *westbound / eastbound* aircraft to fly into Bristol today.



## Functional English – Asking someone to repeat information

- 11 Listen and complete the sentences.

- I \_\_\_\_\_ the word before 'control positions'.
- I \_\_\_\_\_ that last bit.
- What \_\_\_\_\_ after 'morning shift'?
- \_\_\_\_\_ the first part of the sentence?

- Work in pairs. Take turns to read parts of listening script 08 on page 121, but occasionally whisper an important word so that your partner can't hear it. When you don't hear a word, use the expressions above to ask for repetition.

## Speaking

Work in groups. Talk about the weather conditions at your airport and how your airport deals with extreme weather.

# LANDINGS

## Section one – Touchdown



- 1 Work in groups. Look at the pictures. Where do you think the pictures were taken?
- 2 Make a list of the problems fixed-wing aircraft could have on approach and landing. Think about:
  - terrain
  - obstacles
  - manoeuvres
  - runway length
  - weather
- 3 Read the exchanges about difficult landings from a pilot's Internet forum and match the airports with the pictures. Do they mention any problems from your list in 1?

14th July 2008, 11.19

**SUPERMAN** CVF is the only place I know where you can fly a bad weather low-level circuit BELOW the control tower! In an afternoon landing in winter, the sun is so low that from turning finals at two miles to just before touchdown, it's absolutely impossible to see in front of you. You can't go around because there is a mountain in the way. On short final, the runway looks too short and it looks like you're going to hit the mountain, but because part of the runway is at a +18.5% gradient, you have to ADD power to roll out. If the aeroplane stops, you won't get to the apron without someone getting out and pushing.

14th July 2008, 14.16

**JETHEAD747** The 05 instrument approach at SXM is a VOR / DME but it's usually a visual. You can't touch down later than the touchdown zone because you only have a short 7,054 ft for roll-out. Slowing down and cooling is an operational issue. We had to go around once because an aircraft's brakes overheated and seized and it got stuck on the runway. On departure you backtrack onto the runway, do a 180. Right behind the aircraft there is a fence and a beach. There are always people standing near the fence and several have been blown back into the sea by jet blast.

14th July 2008, 14.55

**BULLDOG** The famous HKG runway one-three procedure was incredible. The fun started once eastbound on approach. First you got the view of the city and the skyscrapers. Then the giant red and white squares on the mountainside. You extended the gear as you closed with this marker. Just as it seemed like you were going to fly into the marker, you turned hard right, banking a full 47.5°. You turned so close to the buildings that you could see the people inside. It looked as if you could reach in and change the TV channel. 30 seconds later it was rudders neutral, you flared, and the undercarriage touched down, kissing solid ground. Unforgettable!

14th July 2008, 14.55

**LORD LUCAN** TGU is situated in a basin between mountains, and if you land on runway 01, you circle inside the basin, below the mountaintops. You have to bank hard, and you can look the opposite way and still see trees and mountains. On final you only have 100–200 ft to line up before touchdown. 01 has a displaced threshold, leaving a limited 5,436 ft of useable pavement. There's also a 1.06° downhill slope and a cliff, which is only 100 ft from the end of the runway. It always looks as though you're going to fall off the end of the runway! It used to be even more exciting before they removed a small mountain on the approach path and added traffic lights on Boulevard Hacia Loarque to stop traffic for each arrival or departure.



- 4 Read the text again. Answer the questions. Put a tick (✓) in the table.

| Which airport                                  | CVF | SXM | HKG | TGU |
|------------------------------------------------|-----|-----|-----|-----|
| has no procedure for a missed approach?        |     |     |     |     |
| has a problem with bright light?               |     |     |     |     |
| has problems with braking?                     |     |     |     |     |
| Which airports                                 |     |     |     |     |
| have sloping runways?                          |     |     |     |     |
| have high bank angles on approach?             |     |     |     |     |
| have roads near the runway threshold?          |     |     |     |     |
| have mountain obstacles on the approach paths? |     |     |     |     |

- 5 Can you remember what these numbers refer to?

1 47.5°    2 100 ft    3 7,054 ft    4 +18.5%    5 180°    6 100–200 ft

- 6 Work in pairs. Describe the approach and landing at an aerodrome you know well. What are the interesting features?

### Vocabulary – Landing gear and braking

Decide if the words are related to arrival, departure or gear / brake problems. Write A, D or G/B next to each one.

roll out \_\_\_\_ rotate \_\_\_\_ overheat \_\_\_\_ extend \_\_\_\_ flare \_\_\_\_ touch down \_\_\_\_  
lock \_\_\_\_ seize \_\_\_\_ retract \_\_\_\_ collapse \_\_\_\_ get stuck \_\_\_\_ line up \_\_\_\_

### Functional English – Describing sensory impressions

- 1 Look back at the pilot's Internet forum and complete the sentences.

- On short final, the runway \_\_\_\_\_ too short and it \_\_\_\_\_ you're going to hit the mountain.
- Just as it \_\_\_\_\_ you were going to fly into the marker, you turned hard right.
- It \_\_\_\_\_ you could reach in and change the TV channel.
- It always \_\_\_\_\_ you're going to fall off the end of the runway!

- 2 Work in pairs. Student A, describe what you think is happening in the four pictures below. Try to use the expressions from 1. Student B, look at the complete pictures on p 109. Listen to Student A's ideas first, then tell them if they were correct.

Student A






- 3 Change roles. Student B look at the pictures below, Student A look at the complete pictures on p 105.

Student B






### Speaking

Work in small groups. Discuss what experience you have had of landing gear or braking problems.



## Section three – Undercarriage

- 1 Work in small groups. Each member of the group choose a different picture and study it for one minute. Close your books and then try to describe your picture. Time each person's description. Who produced the longest stretch of language at an appropriate tempo?



- 2 Listen to three dialogues between pilots and tower controllers. Choose the best picture (a-d) for each dialogue.

20,21 1 \_\_\_\_\_ 22 2 \_\_\_\_\_ 23,24 3 \_\_\_\_\_

- 3 Listen to the three dialogues again and underline the correct information.

20,21

- 1 Macair 319 *has / doesn't have* a green light for the nose gear.  
2 After making a low pass, Macair 319 wants to *fly east / orbit the aerodrome*.

22

- 3 A30 is *arriving / departing* traffic.  
4 A30 is going to *return immediately / try and solve the problem*.

23,24

- 5 S62 has *little / a lot of* fuel remaining.  
6 S62 is *behind / in front of* Fastair 350.

## Functional English – Resolving misunderstanding

- 1 Listen again and complete the dialogues.

1 21

**Pilot** I'm sorry. The nose wheel is in position? (1) \_\_\_\_\_ ? Macair 319.  
**Controller** Macair 319. Negative, (2) \_\_\_\_\_. The nose wheel appears down but it's at a 90° angle.  
**Pilot** (3) \_\_\_\_\_ the nose gear is down but stuck at 90°. Macair 319.  
**Controller** Macair 319. (4) \_\_\_\_\_.

2 22

**Controller** A30. It appears your main gear hasn't retracted.  
**Pilot** Roger, my main gear has retracted. Thank you sir, A30.  
**Controller** A30. (5) Negative. \_\_\_\_\_. Your main gear is not retracted. It is still visible.  
**Pilot** OK. Our main gear is stuck ... er ... OK A30.

3 24

**Pilot** Tower, this is Fastair 350 on three-mile final. The apron is to the right of runway 34R.  
(6) \_\_\_\_\_ 34L for the belly-landing for traffic behind me?  
**Controller** Fastair 350. Affirm. Thank you.



- 2 The phrases on the left can be used to check understanding. Match them to the functions on the right. Some of the functions can be used more than once.

- |                              |                                              |
|------------------------------|----------------------------------------------|
| 1 That's right.              | a repeating                                  |
| 2 Say again.                 | b checking understanding / querying          |
| 3 That's incorrect.          | c confirming correct understanding           |
| 4 Understand that ...        | d stating understanding                      |
| 5 Is that correct?           | e asking for repetition                      |
| 6 I say again ...            | f saying someone hasn't understood correctly |
| 7 That's wrong.              |                                              |
| 8 You haven't understood ... |                                              |
| 9 Do you mean ... ?          |                                              |
| 10 Please read back in full. |                                              |

- 3 Work in groups of three. You have reports of three incidents with arriving and departing aircraft. Some of your information in each report is incorrect. If two people have the same information, it is correct. Use the phrases from 2 to resolve any misunderstandings.

Student A read out report A below. Student B go to p 110 and read out report B. Student C go to p 112 and read out report C.

#### Student A

- A Flight SQ286 taxied to runway 05L at Sydney's International Airport and was cleared for take-off. When the captain rotated the B747-412 for lift-off, the tail struck the runway and scraped for 490 m until the aeroplane became airborne. The tail strike occurred because the rotation speed was 35 kt less than the 163 kt required for the aeroplane weight.
- B The controller cleared Flight 504 for a visual approach to runway 15. At 09:54 the crew reported on finals and were cleared to land. The Cessna Citation touched down 45 m short of runway 15 and struck the edge of the runway threshold. It continued for 112 m before coming off the runway. It ran another 263 m before it skidded into the wall of a building and stopped.
- C Flight 1455, a B737-300, was vectored for a visual approach to runway 8. The flight's descent angle was more than 6°. Touchdown speed was 182 kt. The crew couldn't stop the aircraft on the runway and it overran. It crashed through the perimeter fence at a speed of 32 kt and stopped in a lake. The forward service-door escape slide inflated inside the plane and the nose gear collapsed.

## Speaking

Discuss the questions in pairs.

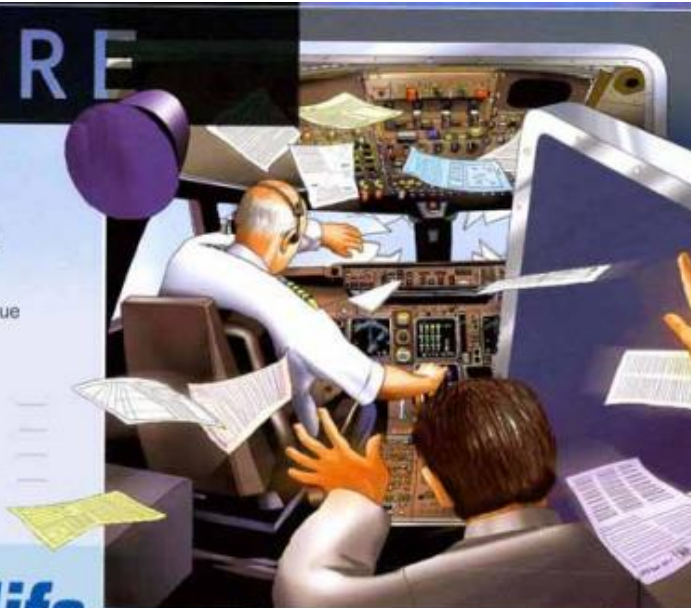
- 1 When was the last time you had to resolve a misunderstanding at work? What exactly happened?
- 2 Have you ever been in a situation where either:
  - a it was impossible to understand someone else?
  - b someone found it impossible to understand you?
- 3 Discuss whether you agree or disagree with the statements below. Give your reasons.
  - 1 Most misunderstandings happen because pilots and ATCs do not use the radio or mic correctly.
  - 2 The only communication strategy needed to resolve misunderstanding is the phrase 'say again'.



# PRESSURE

## Section one - Blast

- 1 Work in groups. Talk about any incidents of rapid decompression you have heard about.
- 2 Read the story and decide if the sentences are true or false. Write *T* or *F*.
  - 1 The co-pilot saved the captain from being sucked out of the plane.
  - 2 The co-pilot tried to stop the plane dropping.
  - 3 They didn't have time to dump fuel.
  - 4 The pilot was unconscious during the incident.



## *Hanging on to life*

### Explosive decompression at 17,000 ft



We took off dead on time, and 13 minutes later we reached 17,000 feet. I was offering the crew tea when suddenly there was an enormous explosion and the door was blown off its hinges. Within seconds, the plane started to drop.

The front windscreen had blown away and Tim, the captain, was being sucked out. I jumped across the cockpit and grabbed his waist. His body was outside the aircraft, bent over the top and his legs had stuck under the controls, disabling the

autopilot. I could feel I was about to be sucked out myself when the chief steward, John, wrapped the captain's shoulder strap around me. The co-pilot, Alistair, was fortunately still strapped in his seat.

Pressure soon equalized with the speed of our fall, and the icy air rushed into the aircraft, blowing charts around the cabin. Alistair increased speed further, and it took just two minutes to get down to 11,000 ft, where there was more oxygen to breathe.

We could see Tim's face outside the window, covered in blood. While I was holding Tim, another steward strapped himself into the third pilot's seat and gave me a hand.

Alistair had managed by now to reconnect the autopilot, and was being talked down to Southampton Airport. For a co-pilot, Alistair was in a very challenging situation, flying alone and without charts into an airport he didn't know. The plane was fully loaded with fuel, but it could take up to five minutes to dump fuel, and with the captain hanging out of the aircraft, he had no choice but to land.

Alistair did a brilliant landing, stopping the heavy aircraft three-quarters of the way down the 1,800 m runway. The whole incident from explosion to landing lasted 18 minutes, but it seemed like hours. We hoped we'd got down in time to save Tim.

By the time we landed, Tim had spent 18 minutes outside the cockpit. During this time he'd been unconscious. When he regained consciousness on the stretcher, his first words were 'I want to eat.' Typical pilot!

3 Complete the table.

| Name     | position      |
|----------|---------------|
| Nigel    | steward       |
|          | chief steward |
| Alistair |               |
| Tim      |               |

4 Work in pairs. Answer the questions.

- Why did they lose the autopilot?
- Who first stopped Nigel, the steward, from being sucked out?
- Why wasn't Alistair sucked out?
- Why did Alistair increase the rate of descent?
- For what reasons was it a very difficult situation for Alistair?
- How did the captain feel when he regained consciousness?

5 Work in pairs. Try to remember what these numbers refer to. Check the text if necessary.

- 13 minutes
- 17,000 ft
- 2 minutes
- 11,000 ft
- 1,800 m
- 18 minutes

Vocabulary – Action verbs

1 Complete the sentences with the words in the box in an appropriate form.

suck drop blow hang jump grab  
wrap bang rush

- The left-hand windscreen \_\_\_\_\_ away.
- The aircraft began to \_\_\_\_\_ towards the ground.
- The captain was being \_\_\_\_\_ out of the aircraft.
- The steward \_\_\_\_\_ over the flight controls.
- Nigel \_\_\_\_\_ Tim around the waist.
- The steward \_\_\_\_\_ the shoulder strap around Nigel.
- The captain was \_\_\_\_\_ out of the aircraft.
- Tim's face was \_\_\_\_\_ against the window.
- Cold air \_\_\_\_\_ into the cabin.

2 Close your books. Retell the incident in your own words.

Functional English – Expressing time and duration



1 Complete the sentences from the text.

- We took off dead \_\_\_\_\_ time.
- \_\_\_\_\_ seconds, the plane started to drop.
- It \_\_\_\_\_ just two minutes to get down to 11,000 ft.
- \_\_\_\_\_ I was holding Tim, Simon strapped himself into the third pilot's seat.
- It could take \_\_\_\_\_ five minutes to dump fuel.
- The whole incident \_\_\_\_\_ explosion \_\_\_\_\_ landing \_\_\_\_\_ 18 minutes.
- We hoped we'd got down \_\_\_\_\_ to save him.
- \_\_\_\_\_ we landed Tim had spent 18 minutes outside the cockpit.
- \_\_\_\_\_ this time he'd been completely unconscious.

2 Underline the correct time expression to complete the facts about depressurization.

- Oxygen helps avert the effects of depressurization at altitude. The oxygen from these masks usually lasts / takes for about 10 minutes.
- While / During flight an airplane pressurizes and depressurizes, causing some passengers discomfort.
- After depressurization, the pilot has just seconds to get oxygen. If he is unable to do this in time / on time / by the time, he will rapidly lose consciousness.
- A hole a metre and a half across will depressurize a jetliner up to / within seconds.
- Airliners have had pressurized cabins to / from the late 1940s to / from the present day.

Speaking

Work in groups of three. Student A is a journalist, Student B is Alistair, the co-pilot, and Student C is John, the chief steward. Roleplay an interview about the incident. Before you begin, prepare what you are going to say.



## Section two - Damage

- 1 Work in pairs. Decide which of the types of damage below could happen to:

- a windshield (W)
- fuselage skin (F)
- landing gear (L)

Write W, F or L next to each word.

- 1 buckled \_\_\_\_\_
- 2 corroded \_\_\_\_\_
- 3 cracked \_\_\_\_\_
- 4 dented \_\_\_\_\_
- 5 punctured \_\_\_\_\_
- 6 shattered \_\_\_\_\_
- 7 smashed \_\_\_\_\_
- 8 torn \_\_\_\_\_
- 9 torn off \_\_\_\_\_
- 10 twisted \_\_\_\_\_

- 2 29,30 Listen to the conversation and answer the questions.

- 1 Where are the speakers?
- 2 What are they talking about?
- 3 What are the photographs of?



- 3 29,30 Listen again. Tick (✓) the types of damage that are mentioned.

- ☐ cracked windshield
- ☐ spoiler torn away
- ☐ torn fuselage
- ☐ cargo door blown out
- ☐ corrosion
- ☐ metal fatigue
- ☐ buckled tailplane
- ☐ dented leading edges
- ☐ smashed instrument panel

- 4 Circle the correct answer.

- 1 What does the trainer think about the tiny crack incident?
  - a They could have continued their flight.
  - b The best thing to do was to wait for the windshield to be replaced.
- 2 Why did the rear cargo door blow off the DC-10?
  - a The lock on the door was not working properly.
  - b The door hadn't been closed properly.
- 3 What happened to the Boeing 737 on landing?
  - a The nose gear worked correctly.
  - b The nose gear buckled and caused more damage.
- 4 What happened when the Boeing 767 was damaged by a flock of birds?
  - a The crew landed the plane.
  - b The captain was injured.
- 5 What does the trainer say about the efficiency of cabin simulators?
  - a A cabin simulator is ideal for practising emergency situations.
  - b A cabin simulator is not really the same as a real emergency situation.



## Section three – Emergency descent



1 Work in groups. Discuss what action the crew should take in an incident of sudden decompression.

2 🎧 32 Listen to the dialogue and answer the questions.

- 1 What does the pilot want to do?
- 2 What caused the problem?
- 3 How many people are injured?

3 🎧 32 Listen again and underline the correct information.

- 1 The *pilot / controller* can't hear the *pilot / controller* well at first.
- 2 The pilot is approximately *14 / 40* miles from the airfield.
- 3 The captain has lost *a lot of blood / consciousness*.
- 4 Windspeed on the runway is *11 / 21* kt.
- 5 The flight attendant sees damage to the *fuselage / leading edges* and *engine / tail*.
- 6 One injured passenger is *having breathing problems / bleeding heavily*.
- 7 The pilot reports damage to the *nose / windshield* and *landing gear / tail*.

### Pronunciation – Contrastive stress

1 We use stress to correct someone who has misunderstood information.

Not **fifty** minutes – **fifteen** minutes.

Underline the sections of words that should be stressed.

- 1 He's talking about outbound flights, not inbound.
- 2 Good? It was excellent!
- 3 You said the flight would leave at half-past seven, not half-past nine.
- 4 No, my first flight this week is Tuesday evening, not Tuesday afternoon.
- 5 Fly faster. Not slower.

2 🎧 33 Listen to the recording to check your answers. Then listen again and repeat.

3 Work in pairs. You are going to practise correcting each other. Student A turn to page 106.  
Student B turn to page 111.

## Functional English – Expressing consequences



### 1 34 Complete the sentences from the dialogue.

- 1 I can't see \_\_\_\_\_ I get out of my seat.
- 2 We've got to get help soon, \_\_\_\_\_ he might not make it.
- 3 \_\_\_\_\_ we don't get to a doctor soon, he may not survive.

### 2 Complete the sentences using *if*, *otherwise* or *unless*.

- 1 We will have to change our heading, \_\_\_\_\_ we will hit the hailstorm.
- 2 The aircraft will be too heavy to land on the runway \_\_\_\_\_ it dumps the remaining fuel.
- 3 \_\_\_\_\_ the radar isn't showing the aircraft we will need to contact the pilot for their precise position.
- 4 There must be a problem, \_\_\_\_\_ the pilot would have answered.
- 5 For military flights there's no contact with Air Traffic Control \_\_\_\_\_ they detect a possible collision.
- 6 You cannot work as an air traffic controller \_\_\_\_\_ you provide an official medical certificate.
- 7 \_\_\_\_\_ you don't do more training in the control room, you won't qualify as a controller this year.

### 3 Decide whether you agree or disagree with the statements below. Write A or D. Then, in pairs, discuss your answers using *if*, *otherwise* and *unless*.

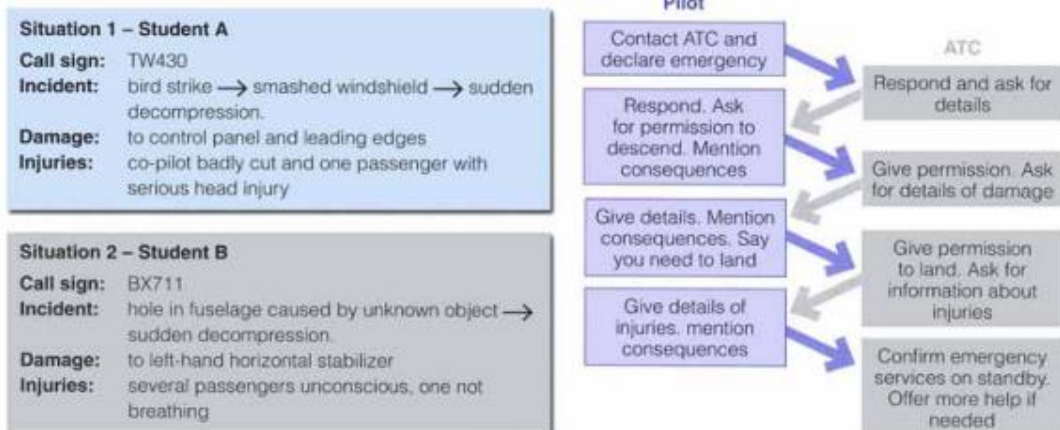
#### Example

*Yes, they must all undergo stress management training, otherwise mistakes will happen.*

- 1 Both pilots and air traffic controllers should undergo stress management training. \_\_\_\_\_
- 2 All ATC should be automated. \_\_\_\_\_
- 3 Pilots should be free to plan their own routing. \_\_\_\_\_
- 4 At least one flight attendant should know how to fly a plane in case of an emergency. \_\_\_\_\_
- 5 Radar should be used in all controlled airspace. \_\_\_\_\_
- 6 All aircraft control should be computerized. \_\_\_\_\_

## Speaking

Work in pairs. You are going to roleplay an emergency situation. Student A is the pilot. Student B is the ATC. Use the chart and the information below to help you. When you have finished situation 1, swap roles.



## Articles



4 Complete the gaps in this article with *a(n)* or *the*.

**O**n April 28, 1988, (1) \_\_\_\_\_ 737 took off from Hilo International Airport bound for Honolulu with 90 passengers and five crew members on board. Nothing unusual occurred during (2) \_\_\_\_\_ take-off and climb.

As (3) \_\_\_\_\_ aircraft reached its normal flight altitude of 24,000 feet, (4) \_\_\_\_\_ small section on (5) \_\_\_\_\_ left side of (6) \_\_\_\_\_ roof ruptured. (7) \_\_\_\_\_ resulting explosive decompression tore off (8) \_\_\_\_\_ large section of the roof, consisting of (9) \_\_\_\_\_ entire top half of (10) \_\_\_\_\_ aircraft skin extending from just behind (11) \_\_\_\_\_ cockpit to (12) \_\_\_\_\_ fore-wing area.

(13) \_\_\_\_\_ first officer immediately contacted Kahului Airport on Maui to declare (14) \_\_\_\_\_ emergency. Sadly, (15) \_\_\_\_\_ flight attendant was ejected through (16) \_\_\_\_\_ hole. (17) \_\_\_\_\_ crew performed (18) \_\_\_\_\_ emergency landing at Kahului Airport.



## Vocabulary – Action verbs

1 Match a verb on the left with a definition on the right.

- |         |                                                                                                         |
|---------|---------------------------------------------------------------------------------------------------------|
| 1 bang  | a to be fixed so that the top part is held in position but the bottom part is loose and can move easily |
| 2 blow  | b to move somewhere quickly and suddenly                                                                |
| 3 drop  | c to knock against something when you are moving                                                        |
| 4 grab  | d to fall                                                                                               |
| 5 hang  | e to pull something using the force of air                                                              |
| 6 jump  | f to hold or keep something in position by fastening a narrow piece of material around it               |
| 7 suck  | g to take hold of something in a rough way                                                              |
| 8 strap | h when air or wind moves                                                                                |

## Verbs describing damage

2 Complete the sentences using words from the box.

blew out    broke through    corrosion    cutting off    dented    metal fatigue  
punctured    smashed    smashed into    buckled    tore away from

- The rear cargo door \_\_\_\_\_.
- The door tore away a spoiler and \_\_\_\_\_ the tailplane.
- The aircraft had \_\_\_\_\_ due to operating in a salty environment, and it was a very old aircraft with serious \_\_\_\_\_.
- Almost 35 m<sup>2</sup> of metal \_\_\_\_\_ the upper part of the fuselage, \_\_\_\_\_ the electrics.
- The lower part of the airframe \_\_\_\_\_.
- A flock of birds \_\_\_\_\_ the aircraft nose, fuselage and wing leading edges, and \_\_\_\_\_ the aircraft skin eleven times.
- One of the birds \_\_\_\_\_ into the cockpit and \_\_\_\_\_ the captain's instrument panel.



# SECURITY



## Section one - Air rage

1 Work in pairs. Discuss the question.

Sometimes a person who is normally polite and law-abiding goes 'crazy' during a flight and causes a security incident. What factors cause this change in behaviour?

2 Read about four incidents of air rage and match the headlines 1-4 with the stories A-D.

- 1 Pilot leaves inebriated passengers on small island \_\_\_\_\_
- 2 Flight redirected after passenger's unusual behaviour \_\_\_\_\_
- 3 Frightened passenger jailed \_\_\_\_\_
- 4 Need to smoke causes passenger to attack pilot \_\_\_\_\_

**A**

A Honolulu-bound Delta Airlines jet was diverted to San Francisco on Tuesday when a female passenger became unruly after trying to smoke in the lavatory. The pilot came back to deal with the disturbance. He threatened to handcuff her if she didn't calm down, but she became hysterical and hit him in the chest. The woman was sedated and taken to hospital by ambulance after the plane landed.

**B**

72-year-old Franco Massa, who was extremely nervous of flying, became drunk and aggressive during a Munich to Toronto flight. He began to harass an elderly woman beside him and, when a steward tried to intervene, Massa punched the steward. He had to be restrained with plasticuffs by fellow passengers. The pilot felt the disturbance was so severe he diverted to Heathrow. The diversion cost £30,000, and Massa was jailed for twelve months.

**C**

A transatlantic flight was diverted to Boston after top model Tatiana Vukovsky started to behave very strangely. Flight attendants were alerted about 90 minutes into the flight when she started jumping on her seat and waving a wine bottle. She appeared very agitated and was swearing loudly at the other passengers. Two members of the crew were bitten as they restrained her.

**D**

Drunken holiday-makers who abused cabin crew on a flight to Tenerife spent 36 hours on a tiny island in the Atlantic after the airline abandoned them, 300 miles from their destination. The men became abusive and aggressive towards staff shortly after their flight took off from Manchester. When they refused to calm down, the pilot took the decision to divert the plane and make an unscheduled stop-off at an airstrip on the tiny Portuguese island of Porto Santo, and the men were removed.

3 Read the texts again. In which story:

- 1 did a passenger use offensive language? \_\_\_\_\_
- 2 were passengers removed from the flight? \_\_\_\_\_
- 3 did a passenger go to jail? \_\_\_\_\_
- 4 did passengers become aggressive shortly after take-off? \_\_\_\_\_
- 5 did someone get bitten? \_\_\_\_\_
- 6 did a passenger annoy an old lady? \_\_\_\_\_
- 7 did a passenger have to be taken to hospital? \_\_\_\_\_
- 8 was the pilot assaulted? \_\_\_\_\_



## Vocabulary – Conflict and restraint

Match the beginnings with the endings to make sentences.

- |                                                              |                                                                 |
|--------------------------------------------------------------|-----------------------------------------------------------------|
| 1 Despite several warnings, the passenger refused            | a one of them in the arm.                                       |
| 2 Two of the passengers were behaving in                     | b a disturbance on the flight.                                  |
| 3 The captain threatened to                                  | c in the knee after he asked her to calm down.                  |
| 4 The passenger continued to drink more wine until he became | d to cooperate with requests.                                   |
| 5 Three people helped the flight attendant to restrain       | e agitated because she was unable to smoke on the plane.        |
| 6 She kicked the pilot                                       | f remove the drunken passenger if he didn't return to his seat. |
| 7 The cabin crew got hold of the passenger but he bit        | g plasticuffs on him.                                           |
| 8 The crowd of football supporters created                   | h very drunk.                                                   |
| 9 The traveller was                                          | i the passenger and sit her down at the rear of the plane.      |
| 10 The cabin crew eventually managed to put                  | j a noisy and violent way.                                      |

## Functional English – Focusing on actions

Look at these sentences from the texts, which all focus on the action rather than on the person, thing, etc. that is doing the action.

The woman **was taken** to hospital by ambulance after the plane landed.

He had to **be restrained** with plasticuffs by fellow passengers.

Massa **was jailed** for twelve months.

Two members of the crew **were bitten** as they restrained her.

The men **were removed**.

Change the sentences below so that they focus on the actions in the same way as the examples above.

- People injure dozens of flight attendants each year in air rage incidents.  
Dozens of flight attendants are injured each year in air rage incidents.
- They keep plastic restraints on all flights to deal with violence on board.  
\_\_\_\_\_
- They give cabin crew training for dealing with aggressive passengers.  
\_\_\_\_\_
- They used a belt to restrain the passenger.  
\_\_\_\_\_
- They didn't allow the passengers to board the flight because they were drunk.  
\_\_\_\_\_
- We have diverted this flight and will be landing shortly.  
\_\_\_\_\_
- Police will arrest this passenger as soon as we land.  
\_\_\_\_\_

## Speaking

Work in small groups. Discuss the questions.

- How could airlines prevent air-rage incidents?
- How should cabin crew be trained to deal with these incidents?
- How should violent passengers be restrained?
- How should passengers be punished for such incidents?
- Do you know any stories of air rage incidents?





## Section two – Suspicious passengers



- 1 Work in pairs. Discuss the questions.
  - 1 What methods currently exist to identify a suspicious passenger at the airport?
  - 2 What body language do you associate with a suspicious passenger? Make a list.
- 2 35 Listen to security expert Kalle Kaub talking about a new technique for screening potentially dangerous passengers. Does he mention any of the same body language you listed?
- 3 35 Listen again and answer the questions.
  - 1 What does Kalle think of technology in airport security?
  - 2 Why do criminals behave differently to other passengers?
  - 3 What parts of the face make small movements when someone is nervous?
  - 4 What do Kalle's officers do if they are suspicious of a passenger?
  - 5 What three things can happen in a 'secondary screening'?
  - 6 What types of crime have already been stopped using this technique?

### Vocabulary – Strange behaviour

Complete the sentences with the words from the box.

body eye hand head leg lips palms voice

- 1 Officers try to make friendly \_\_\_\_\_ contact to see if a suspicious person reacts normally.
- 2 Passengers undergo a \_\_\_\_\_ search to check that they are not carrying any weapons.
- 3 One sign of a passenger acting suspiciously is stepping forward on the left \_\_\_\_\_.
- 4 Moving the \_\_\_\_\_ forward is a common sign of aggressive behaviour.
- 5 Officers should look for small movements of the \_\_\_\_\_.
- 6 A \_\_\_\_\_ position with the \_\_\_\_\_ down can indicate suspicious behaviour.
- 7 A rise in the volume and pitch of the \_\_\_\_\_ is a sign of stress.



### Section three – Unlawful interference

- 1 Work in pairs. Discuss the questions.
  - 1 What measures do airlines take to prevent passengers getting into the cockpit?
  - 2 Do you know of any incidents where a passenger has tried unsuccessfully to enter the cockpit? What happened?
- 2 🎧 38,39 Listen to this incident aboard a passenger jet, and underline the correct information.
  - 1 There is a very *violent / drunk* passenger on board.
  - 2 The plane is entering *Japanese / Korean* airspace.
  - 3 They decide to *divert and land / return to their departure airport*.
- 3 🎧 38,39 Listen again and answer the questions.
  - 1 Who does the man hit?
  - 2 How do they restrain the man?
  - 3 Why is the man violent?
  - 4 What does the pilot tell the attendant to do with the man?
  - 5 What services do they request at the airport?
  - 6 How many passengers are on board?
  - 7 When will they enter Korean airspace?

### Pronunciation – Information groups and stress

- 1 Read the extract from the listening and put a forward slash (/) where you think the pauses should go.
 

**PNF** centre Interflight 547 a passenger has attempted to enter the flight deck he's also attacked the cabin crew there are injuries we have restrained him but we need to get him off the plane as soon as possible

**T** Interflight 547 understand you have an unlawful interference please say fuel and persons on board

**PNF** er 178 persons and four hours of fuel remaining can we descend to the nearest available aerodrome we'll need medical and security services ready Interflight 547

**T** Interflight 547 you are approaching Korean airspace contact Incheon control on 123.6 I'll advise them of your situation and pass on your request
- 2 Now underline the parts of words that are stressed, and double underline the part of each information group that carries the main stress.
- 3 🎧 39 Listen and check your answers.

## Functional English – Reporting

- 1 Work in pairs. Look at the pilot's original sentence to the Tokyo ATC, and how the ATC reported the same information. Try to complete the sentences with the missing verbs.

| Pilot                                               |   | ATC                                                    |
|-----------------------------------------------------|---|--------------------------------------------------------|
| 1 A passenger _____ to enter the flight deck.       | → | 5 They _____ a passenger to enter the flight deck.     |
| 2 There _____ injuries.                             | → | 6 The crew _____ me there.                             |
| 3 _____ descend to the nearest available aerodrome? | → | 7 They asked _____ descend to the nearest aerodrome.   |
| 4 _____ medical and security services ready.        | → | 8 They said _____ medical and security services ready. |



- 2 🎧 39 Listen again and check your answers.

- 3 Work in pairs. Discuss the questions.

- What usually happens to the tense of verbs in reported speech?
- What happens to *can* and *will* in reported speech? What do you think happens to *shall*?

- 4 Read the direct quote and then change the sentence using the reporting verb given.

- 'Sir, you have to leave the plane now.'  
The security guard told \_\_\_\_\_
- 'Shall I contact MediLink?'  
The captain asked \_\_\_\_\_
- 'One of our flight attendants has been injured.'  
The pilot said \_\_\_\_\_
- 'Contact Incheon Control.'  
The air traffic controller told the pilot \_\_\_\_\_
- 'We have an emergency in the cabin.'  
The flight attendant said \_\_\_\_\_
- 'There are three serious injuries on board.'  
The co-pilot told the ATC \_\_\_\_\_
- 'We would like to divert to another airfield.'  
The pilot said \_\_\_\_\_

## Speaking

- Work in groups of three. First, write down ten questions that a journalist could ask the head of airport security about his / her reaction to the incident, the measures in place, etc.
- Student A, you are the head of airport security. Answer the reporter's questions about the incident.  
Student B, you are a reporter for a national newspaper. Ask the questions you prepared, and any others that you think of during the interview.  
Student C, listen and note down the questions and answers (you don't need to write every word – just enough to help you remember afterwards).
- Work together to write a report of the interview, and then read it to another group.



## STARTER

Match instructions 1–10 with the pictures on the passenger safety card.



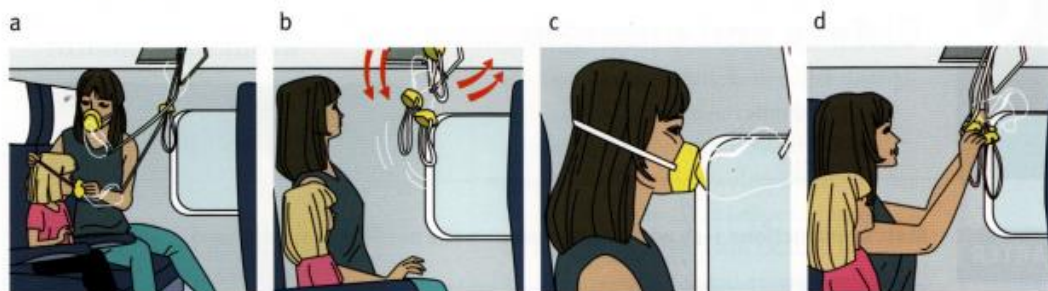
- 1 \_\_\_\_\_ Close overhead lockers and stow bags under seats.
- 2 \_\_\_\_\_ Disarm the door.
- 3 \_\_\_\_\_ Fasten your seat belts.
- 4 \_\_\_\_\_ Get down low and follow the floor lighting.
- 5 \_\_\_\_\_ Jump onto the slide feet first.
- 6 \_\_\_\_\_ Open the emergency exit next to your seat.
- 7 \_\_\_\_\_ Put on your own oxygen mask first.
- 8 \_\_\_\_\_ Take up the brace position.
- 9 \_\_\_\_\_ Use the overwing emergency exits over water.
- 10 \_\_\_\_\_ Your life jacket is under your seat.



- 1** Listen to the flight attendant's announcement. Which pictures from the safety card apply to this situation?

SCHOOL OF ENGLISH

**2 Listen again. Number the pictures in the right order.**



**3 Match each action with the pictures in exercise 2.**

- 1 \_\_\_ Pull a mask towards your face.
- 2 \_\_\_ Place the mask over over your nose and mouth.
- 3 \_\_\_ Remember to secure your own mask before helping others.
- 4 \_\_\_ The oxygen masks will drop down.

**4 Now match the actions in exercise 3 with a link word and an explanation below.**

| Link word                               | Explanation                            |
|-----------------------------------------|----------------------------------------|
| _____ due to/because of                 | a a drop in cabin pressure.            |
| <i>Pull a mask towards your face</i> so | b keep the mask in place.              |
| _____ because                           | c you must remain conscious and alert. |
| _____ in order to                       | d you can breathe the oxygen.          |



**5 Listen to the pilot's announcement. Use the words in the box to complete the sentences.**

after • before • once • until • when • while

- 1 \_\_\_\_\_ your oxygen masks drop down, please use them \_\_\_\_\_ we descend to a lower altitude.
- 2 Keep your masks on \_\_\_\_\_ we tell you to take them off.
- 3 \_\_\_\_\_ we get down to 10,000 feet, we'll make another announcement.
- 4 Please feel free to ask the cabin crew if you need any assistance \_\_\_\_\_ we get to Minsk.
- 5 \_\_\_\_\_ landing, we will make alternative arrangements for you.

**6 Underline the correct alternative.**

- 1 The Captain is concerned about the loss of pressure / rapid descent.
- 2 The aircraft is descending slowly / quickly in order to reach a safe altitude.
- 3 The aircraft is descending to above / below 10,000 feet because passengers can breathe without extra oxygen at that altitude.
- 4 The Captain is explaining the process so this is probably a controlled / an emergency descent.

## 10 Read the text and answer the questions.

A rapid decompression is much more serious than a gradual decompression and the effects will appear extremely quickly. There will be no time to ask and answer questions.

During a rapid decompression ...

- 1 there will be a loud noise and a sudden fogging or misting of the cabin. These are caused by the sudden change in pressure. There will also be a rapid temperature drop.
- 2 oxygen levels will fall very quickly and cause hypoxia – a condition where the human body isn't getting enough oxygen.
- 3 lack of oxygen quickly leads to dizziness, nausea, loss of judgement, and problems with vision.
- 4 you may have less than one minute to put on your oxygen mask before you lose consciousness.
- 5 physical activity becomes difficult and dangerous because oxygen levels are low.
- 6 the temperature will fall rapidly.
- 7 exposure to extremely low temperatures causes hypothermia, a condition where body temperature becomes dangerously low.
- 8 sudden pressure changes may cause pain from trapped gas in the body.
- 9 any unsecured objects or persons may move around the cabin or be sucked out of the aircraft.

- 1 What causes a loud noise when there is a rapid decompression?
- 2 What is *hypoxia*?
- 3 What will happen to you if you don't put on your oxygen mask?
- 4 Why does physical activity become difficult after a rapid decompression?

## 11 Put the words in the box in the correct column in the table.

dizziness • fog and mist • hypothermia • loss of judgement • nausea •  
objects moving around the cabin • pain from trapped gases • vision problems

Rapid decompression problems caused by ...

| very low temperatures | lack of oxygen | sudden pressure change |
|-----------------------|----------------|------------------------|
|                       |                |                        |



## 12 In emergency situations, the crew have to issue direct orders. Listen and underline the main stress on each order.

- 1 Keep your mask on!
- 2 Stay calm!
- 3 Stay in your seat!
- 4 Keep your seat belt fastened!
- 5 Don't unfasten your seat belt!
- 6 Sit down!
- 7 Breathe normally.
- 8 Put your own mask on first.
- 9 Hold on!
- 10 Don't get up.

## 13 Work with a partner. Take turns reading the orders aloud and saying the main stress.

**14 Answer the questions.**

- 1 What is *turbulence*?
- 2 How can it cause injury?
- 3 What should passengers and flight attendants do to prevent injuries from turbulence?

**15 Read the descriptions of what happens during turbulence. Then tick light (L), medium (M), or severe (S) for each description.**

|                                                            | L                        | M                        | S                        |
|------------------------------------------------------------|--------------------------|--------------------------|--------------------------|
| 1 Drinks shake inside cups.                                | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2 Drinks splash out of cups.                               | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3 Trolleys are difficult to manoeuvre.                     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4 Unsecured objects fall over or lift off the floor.       | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 5 Passengers may feel slight straining against seat belts. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 6 Service and walking are impossible.                      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 7 Passengers feel strain against seat belts.               | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 8 Standing is difficult without bracing.                   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 9 Passengers are forced violently against seat belts.      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 10 Trolleys are easy to manoeuvre.                         | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 11 Unsecured objects are thrown about.                     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 12 Walking is difficult.                                   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

**16 Read the blog. Number the paragraphs in the correct order.**

**A WARNING for anyone who doesn't take turbulence seriously**

a \_\_\_ We all left the floor and hit the walls and ceiling. It was really scary. Thank goodness all the boxes and trolleys were secured as it could have been a lot worse. I broke my foot in three places and another crew member hurt her ankle very badly.

b \_\_\_ I haven't returned to work because of my foot. I'm now enjoying a quiet summer – I just wish the weather was better! Like many others I never took turbulence seriously ... but I will from now on. My advice is stay safe and strap in whenever you can!

c \_\_\_ Then, about thirty seconds after the seatbelt sign was switched on, we dropped 500

feet – twice. Luckily, all the passengers were strapped in but none of the crew was. I was in the aft galley of a B767 with six other crew members.

d \_\_\_ Once the aircraft was stable again everyone was shocked at how bad the turbulence was – and at how quickly it had happened. There was absolutely no warning.

e \_\_\_ We were inbound from Alicante and two hours from Wessex airport when the Captain switched the seatbelt sign on. It wasn't at all rough at the time but there was a thunderstorm ahead and the Captain was being careful. There was no turbulence warning.

**17 Mark the sentences True (✓) or False (x).**

- |                                                       |                          |
|-------------------------------------------------------|--------------------------|
| 1 This was a case of light turbulence.                | <input type="checkbox"/> |
| 2 The aircraft dropped about 1,000 feet very quickly. | <input type="checkbox"/> |
| 3 The captain hadn't turned on the seatbelt sign.     | <input type="checkbox"/> |
| 4 Several passengers were injured.                    | <input type="checkbox"/> |
| 5 There was no warning of turbulence ahead.           | <input type="checkbox"/> |

## 18 Use the words in the box to complete the conversation.

allow • drops • fall • return • sit down • strap in • switched • work

- Flight attendant: Sir, the Captain has \_\_\_\_\_<sup>1</sup> on the seat belt sign. Could you go back to your seat, please?
- Passenger: Yeah, I know. I'm fine.
- Flight attendant: Sir, you must \_\_\_\_\_<sup>2</sup> to your seat now. We're expecting turbulence.
- Passenger: Don't worry. It'll be fine.
- Flight attendant: Sir, I'm sorry but I cannot \_\_\_\_\_<sup>3</sup> you to stand. It could get really rough. Everyone must return to their seats and \_\_\_\_\_<sup>4</sup>.
- Passenger: Look. I'm fine. I \_\_\_\_\_<sup>5</sup> on ships at sea – in really big waves ... you know?
- Flight attendant: Don't worry, I won't \_\_\_\_\_<sup>6</sup> over.
- Flight attendant: Sir, I doubt if your ship \_\_\_\_\_<sup>7</sup> hundreds of feet without any warning.
- Now, \_\_\_\_\_<sup>8</sup>!



Listen and check.

## 19 Listen again. Tick how the flight attendant uses her voice to be assertive.

- |                                               |                                               |
|-----------------------------------------------|-----------------------------------------------|
| 1 <input type="checkbox"/> She shouts.        | 4 <input type="checkbox"/> She talks slowly.  |
| 2 <input type="checkbox"/> She talks quickly. | 5 <input type="checkbox"/> She talks clearly. |
| 3 <input type="checkbox"/> She talks quietly. | 6 <input type="checkbox"/> She talks loudly.  |

## 20 Number the sentences in the conversation in the correct order.

### Flight attendant

- a \_\_\_\_\_ Your son must be strapped in, too.
- b \_\_\_\_\_ Thank you.
- c \_\_\_\_\_ Excuse me madam, but the Captain's switched the 'fasten seat belt' sign on.
- d \_\_\_\_\_ Madam, we're expecting severe turbulence very soon. Strap him in now! It's for his own safety.
- e \_\_\_\_\_ I'm sorry madam, he's not secure. You must use the extension belt. Here, let me help you.

### Passenger

- f \_\_\_\_\_ I can hold him on my lap.
- g \_\_\_\_\_ All right, all right. I am. Look.
- h \_\_\_\_\_ Oh, for goodness sake! He'll scream the place down, you know.
- i \_\_\_\_\_ Yeah, I know. I'm strapped in.

Listen and check. Then work with a partner. Practise reading the conversation with the correct tone.

### DID YOU KNOW?

Flight attendants must always be polite to passengers but they must also ensure that all passengers comply with airline regulations. This may lead to some difficult exchanges.



## 21 Listen. Underline the correct alternative.

- 1 The passenger is using his laptop / radio.
- 2 The passenger is cooperative / uncooperative.
- 3 The flight attendant's language becomes more / less assertive.
- 4 The captain / purser will look after the device for the rest of the flight.

## 22 During the exchange the flight attendant uses four tactics. Put them in the order she uses them.

- a \_\_\_\_ gives advice
- b \_\_\_\_ explains the regulations
- c \_\_\_\_ asks the passenger to cooperate
- d \_\_\_\_ gives a warning

Listen again and check.

## 23 Match sentences 1–4 with the four tactics in exercise 22.

- 1 \_\_\_\_ If you do not cooperate, this will be a matter for the authorities.
- 2 \_\_\_\_ Please make sure it stays off for the rest of the flight.
- 3 \_\_\_\_ I suggest you put the headphones down and pass me the microphone.
- 4 \_\_\_\_ You can't use this equipment on board the aircraft.

## 24 Work with a partner. Practise dealing with difficult situations.

### PARTNER FILES

Partner A File 7, p. 71  
Partner B File 15, p. 73

### USEFUL PHRASES

#### Asking for cooperation

Could you ... ?  
Can you switch it off, please?  
Please put/pass/give me the ...  
Please make sure ...

#### Advice

I (strongly) advise you to ...  
I suggest you ...

#### Explaining rules and regulations

That's/It's not allowed.  
It can't be used ...  
You can't use ...  
You must switch it off/stop using ...

#### Warning

If you do not cooperate, this will ...  
Sir, this incident has been reported to ...

## APENDIX

### Unit 1 - Section 2

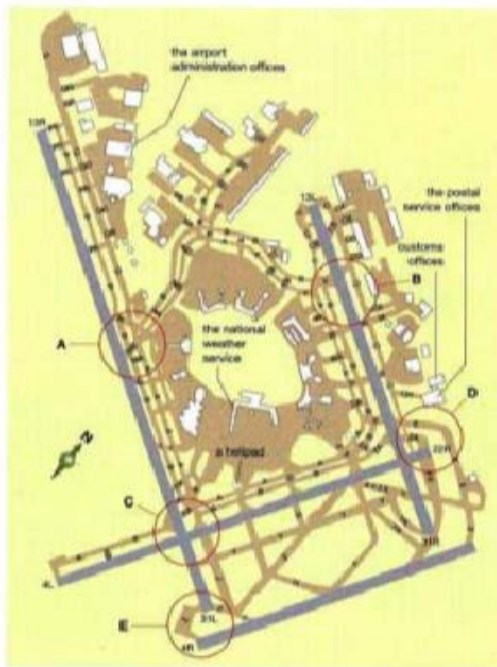
(p 10)

Find out from Student A where the following buildings and features are. Mark them on your map.

- the general aviation terminal
- the airport police station
- the aircraft rescue and fire-fighting station
- the international arrivals terminal
- the control tower
- a helipad

Describe the position of the buildings and features that Student A 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



### Unit 1 - Section 3

Pronunciation (p 12)

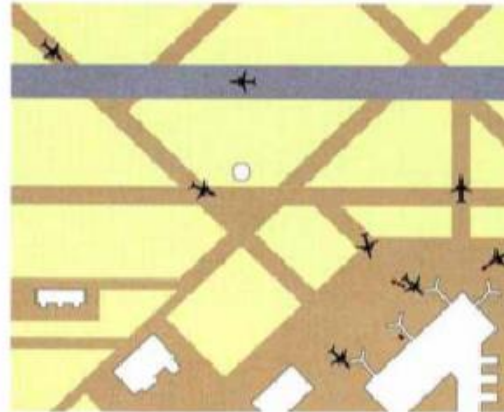
- 1 Listen to your partner and write the call signs.
- 2 Read the call signs to your partner then check what you have both written.

- |          |         |
|----------|---------|
| 1 AB793  | 4 EK265 |
| 2 PH4870 | 5 ZB256 |
| 3 FI190  |         |

### Speaking (p 13)



You and your partner have the same picture of an airfield with different things missing. Describe your airfield and listen to your partner's description of theirs. Draw anything that is missing.



### Unit 2 - Section 1

Functional English (p 17)

Work with another student B. Use the words in the box to write the complete forms of the abbreviations below. Then form a pair with a Student A to find out what their abbreviations stand for.

|            |         |      |        |           |        |             |
|------------|---------|------|--------|-----------|--------|-------------|
| air        | around  | be   | flight | fuel      | go     | information |
| instrument | landing | off  | region | specified | weight | zero        |
| speed      | system  | take | to     | true      |        |             |

FIR flight information region

TAS \_\_\_\_\_

TBS \_\_\_\_\_

TOGA \_\_\_\_\_

ZFW \_\_\_\_\_

ILS \_\_\_\_\_

Student A's abbreviations

AGL \_\_\_\_\_

DTG \_\_\_\_\_

FAF \_\_\_\_\_

FDR \_\_\_\_\_

OAT \_\_\_\_\_

RVR \_\_\_\_\_

# ICAO Radiotelephony Alphabet

|                    |                     |                     |                    |                    |                                                                                     |                      |
|--------------------|---------------------|---------------------|--------------------|--------------------|-------------------------------------------------------------------------------------|----------------------|
| <b>A</b><br>Alfa   | <b>B</b><br>Bravo   | <b>C</b><br>Charlie | <b>D</b><br>Delta  | <b>E</b><br>Echo   | <b>F</b><br>Foxtrot                                                                 | <b>G</b><br>Golf     |
| <b>H</b><br>Hotel  | <b>I</b><br>India   | <b>J</b><br>Juliett | <b>K</b><br>Kilo   | <b>L</b><br>Lima   | <b>M</b><br>Mike                                                                    | <b>N</b><br>November |
| <b>O</b><br>Oscar  | <b>P</b><br>Papa    | <b>Q</b><br>Quebec  | <b>R</b><br>Romeo  | <b>S</b><br>Sierra | <b>T</b><br>Tango                                                                   | <b>U</b><br>Uniform  |
| <b>V</b><br>Victor | <b>W</b><br>Whiskey | <b>X</b><br>X-ray   | <b>Y</b><br>Yankee | <b>Z</b><br>Zulu   |  | ICAO                 |

# Check Point

SCHOOL OF ENGLISH

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