


**Start here** 1 Work in pairs. Discuss this problem and brainstorm some possible solutions. Make a list of the best solutions.

**RADIO AERIALS** are essential equipment for telecommunications of all kinds. And yet, despite their importance, they are very delicate pieces of equipment. They are often made of materials which break easily, such as copper. For many decades, complaints have been received from professionals working in emergency situations – policing, war zones, fire fighting or disaster relief – that their radio aerials have been easily destroyed and that lives have been lost or put in danger as a result.



**Listening** 2  20 Listen to a product launch of a new type of aerial and answer these questions.

- 1 How does the new aerial solve the problem in 1? Compare with your list of solutions in 1.
- 2 The new aerial is made of an alloy of which two metals?
- 3 What method is used to tune the new aerial to the correct wavelength?

3 Listen again and do the following.

- 1 List five useful properties of the new aerial that are mentioned.
- 2 List the four forces or stresses that an aerial is normally subjected to.

4 Listen again and complete the speaker's words with the words and phrases in the box.

in other words To put this in everyday terms that is Another way of putting this is that  
i.e. To put that in layman's terms or that is to say

- 1 The first is resilience, \_\_\_\_\_, the ability to bend but not break under pressure.
- 2 And the second is a regenerative capability, \_\_\_\_\_, the ability to repair itself.
- 3 The four main forces are ... compression, \_\_\_\_\_ squeezing ...
- 4 ... torsion, \_\_\_\_\_, a twisting force ...
- 5 ... and finally impact, \_\_\_\_\_ striking or hitting.
- 6 \_\_\_\_\_, you can't break it by striking it, pulling it, pressing on it or twisting it.
- 7 \_\_\_\_\_ we have produced an aerial which bends without breaking ...
- 8 \_\_\_\_\_, you change the length of the aerial to match the vibration of the wave that's coming in.

**Language** Words and phrases to signal that you are about to explain something

Explaining single words or short phrases: *or, that is, that is to say, in other words, i.e.*

Explaining longer passages: *another way of putting it is that, to put that another way, to put this in everyday terms / language, to put that in layman's terms / language*



- 5 Match the technical terms in *italics* with their less specialised explanations a–h.

Note: Explanations in a–h are not necessarily scientifically or technically exact.

- |   |  |
|---|--|
| 1 Aerials use an electrical current that <i>oscillates</i> .                    | a) it melts at room temperature                  |
| 2 The current oscillates at a specific <i>frequency</i> .                       | b) vibrates                                      |
| 3 Aerials send out <i>electromagnetic radiation</i> .                           | c) speed of vibration                            |
| 4 They are made of a <i>conductive material</i> .                               | d) the wave that you're sending out              |
| 5 Our team found an alloy with <i>high fluidity</i> .                           | e) magnetic waves caused by an electric current  |
| 6 The alloy has a <i>low melting point</i> .                                    | f) it can stretch like an elastic band           |
| 7 The aerial has <i>high elasticity</i> .                                       | g) a substance that can carry electrical current |
| 8 The aerial length must match the frequency of the <i>outgoing radiation</i> . | h) it flows easily                               |

- 6 Make full statements from the table, using a variety of expressions from the language box on page 56.

Example: *1 Aerials use an electrical current that oscillates, that is, vibrates.*

- 7 Work in pairs. Discuss the differences between the speaker's *technical* description and *everyday* description. What methods does the speaker use to make the meaning clearer to a non-specialist audience?

### Technical

Aerials transmit signals by using an oscillating electrical current in a length of conductive material to generate electromagnetic radiation.

### Everyday

To put that in everyday language, this is what happens. An aerial is basically a rod made of a material, such as copper, which can conduct, or carry, electrical current. The current vibrates at a particular speed, and the vibration sends out magnetic waves, known as radio waves. It's a bit like throwing a stone into a pool of water. The vibration of the stone hitting the water sends out water waves in all directions. Or think of clapping your hands together and sending out sound waves.

### **Language**

To explain technical terms or ideas to a non-technical or non-specialist audience, it often helps to make comparisons with:

- parts or functions of the human body: *an aerial that can repair itself, just as human skin does*
- everyday objects: *an aerial is basically a rod made of a material, such as copper; it can be stretched like an elastic band*
- everyday actions and events: *an aerial which bends without breaking, as a palm tree does in a hurricane; it's a bit like throwing a stone into a pool of water; think of clapping your hands together and sending out sound waves*

### **Task**

- 8 Work in pairs. Choose two of the following items from this unit, and prepare brief explanations (max 80 words) for a non-technical audience. Use the strategies above. Then explain your items to another pair, without mentioning the name. Can they work out which ones they are?

Augmented Reality (AR), SixthSense, capacitive touch screen, surface acoustic wave touch screen, flexible aerial, capacitor, electrical circuit, electrode

### **Writing**

- 9 Choose a concept, principle, technology or piece of equipment which is important in your technical field or industry. Describe and explain the same information in two different texts – one technical and the other non-technical.



# 1.1 Grammar

## Impersonal constructions

One of the most common register mistakes made by inexperienced writers involves using too personal a manner in a piece of formal writing. A chatty style, characterized by the use of the words *I* and *you*, could be inappropriate and even offensive in a formal letter or a magazine article.

### 1 Me, myself, I

Everybody likes to talk about themselves, but when (for example) you're reviewing a film, you should be talking about the film and not about yourself.

Rewrite these three passages so that the writers are no longer talking about themselves.

#### Example

In my opinion, this is a highly amusing film.

*This is a highly amusing film.*

- a I would say that the best place to spend an autumn afternoon in Paris is probably the Jardins de Luxembourg.
- b The actress playing his lover is Juliette Binoche, and although I personally don't like her very much I must admit that her performance is very good.
- c From my point of view, this guidebook is very helpful. It tells me about many little-known places and, as I'm not the kind of person who likes to be part of a crowd of tourists, I think this is the right guidebook for me.

### 2 The informal you

The way the word *you* is used in informal speech ('You should have seen it!' 'if you know what I mean') is not appropriate in formal writing. At best it sounds chatty and informal; at worst, disrespectful or even offensive.

The word *you* points a finger at the reader. But the readers are not friends of yours, and you have no right to make assumptions about them. Consider the following sentence from a film review written by a student.

The film is about what happens when you become middle-aged: you comb your hair over the bald patch; . . .

A man reading this will be offended because you accuse him personally. A woman might say you are talking nonsense. What the student meant was:

*The film is about what happens to a man when he becomes middle aged: he combs . . .*

Who exactly are you referring to?

To yourself?

This book convinces you of the advantages of vegetarianism, and after reading it you never want to eat a dead animal again.

*This book convinced me of the advantages of vegetarianism, and after reading it I never wanted to eat a dead animal again.*

To a specific person or group of people?

If your house is burgled, you can feel violated.

*Victims of a burglary can often feel violated.*

Or to people in general?

This film makes you meditate on the meaning of life and reconsider your attitude to religion.

*This film makes one meditate on the meaning of life and reconsider one's attitude to religion.*

(Use *one* only in formal written English, and don't use it to refer just to yourself.)

Rewrite the following sentences without using the word *you*, as if you were writing a fairly formal article or review in a newspaper or magazine.

- a If you marry now, in the '90s, you only stand half a chance of staying married for a lifetime.
- b You easily forget how different life was 50 years ago.
- c It's incredible when you hear about how much they spend on the army, especially when you think of all the poor and homeless people.
- d *The Happy Kitten Beginners Picture Dictionary* is a good way of improving your vocabulary.
- e As you read this book, you gradually become less ignorant about what it is like to belong to an ethnic minority that suffers from racial discrimination and abuse.
- f The open fire and the dogs roaming around the restaurant will remind you of home.
- g This book tells you everything you need to know about banking.
- h Focusing on the problems faced by working class people in the States today, this is a film that really makes you think.
- i In my home town, you're always seeing violence in the streets, but you soon learn to turn a blind eye.
- j In my country there are few jobs for school leavers, but when you're desperate you'll do anything to get ahead.

### 3 The aggressive you

When the word *you* would sound unnecessarily direct and even aggressive, it can often be avoided by use of the passive.

You didn't send us the cassettes we ordered, and we've paid you for them.

*We have not yet received the cassettes, which were ordered and paid for.*

Rewrite the following sentences, replacing the personal construction with a passive.

- a What I don't like about your club is that you don't offer enough activities for young people.
- b You must do something about these problems.
- c If you want to keep your customers happy, you shouldn't break the promises you make in your brochure.

## 1.2 Register transfer

Read the following piece of informal, spoken English in which someone describes a job advertisement to a friend, then use the information in it to complete the numbered gaps in the job advertisement itself. **Use not more than two words for each gap.** The exercise begins with an example (0). The words you need **do not** occur in the informal, spoken English. See page 11 for information and advice about this exam task type.

### Informal spoken English

'There's an advert here in the paper for a job that might interest you, Maria. A young airline executive wants a Personal Assistant. The money's not bad – £1,300 a month – but the job's only temporary. The person who normally does the job is off for six months, having a baby.

'Actually, the job sounds right up your street. You've only got to know how to use a word processor and be a bit of a linguist: they're asking for good English and at least one other European language. And you mustn't mind working overtime.

The other thing they say is that they want to give the job to somebody who's got "good interpersonal skills". I'm afraid that means being charming, sociable and articulate. (Never mind, I'm sure they'll accept a rude, sulky delinquent if she's good enough at bluffing her way through interviews!) Oh yes, and you've got to be good on the telephone.

If you're interested in the job, you've got to phone to get an application form. The woman you speak to will also be able to tell you more about it. Then you've got to fill out the form and send it off by the end of February, otherwise you'll be too late. Doesn't give us much time to work on your "interpersonal skills", does it?

### Job advertisement in a newspaper

#### **RICHTHOFEN AIR**

*Personal assistant (based in Manchester)*

*Fixed term contract*

*Salary £1,300 per month plus paid overtime.*

A young airline executive (0) **requires** a Personal Assistant for six months while the present postholder is on (1) \_\_\_\_\_.

The successful (2) \_\_\_\_\_ should have word processing (3) \_\_\_\_\_, a good (4) \_\_\_\_\_ of the English language and a keen interest in air travel. Fluency in one or more European languages is highly (5) \_\_\_\_\_, as is a willingness to work overtime.

The person (6) \_\_\_\_\_ would also be expected to (7) \_\_\_\_\_ good interpersonal skills and an excellent telephone (8) \_\_\_\_\_.

Application forms and (9) \_\_\_\_\_ information concerning the post are (10) \_\_\_\_\_ from Sue Murphy (phone 0171 606 9999).

(11) \_\_\_\_\_ application forms must be returned by February 28th. No applications will be (12) \_\_\_\_\_ after that date.



# Business reports: **Presenting the facts**

was gathered • ~~explains~~ •  
discusses • a course of action •  
the significance of the results •  
the purpose of the report •  
explains • the data or •  
other information collected •  
and suggests • describes •  
how the information in the report

- 1 A business report provides an analysis of a topic and generally consists of four main sections. Use the expressions from the box to write a definition for each section.**

Introduction: explains

Procedure: \_\_\_\_\_

Findings: \_\_\_\_\_

Conclusions & recommendations: \_\_\_\_\_

- 2 Read the following report. What is the author's function in the company and what are his reasons for writing the report?**

**To:** Jerome Quest, CEO  
**From:** Brad Shields, VP HR  
**Date:** October 26, 20xx  
**Subject:** Staff-related cost-reduction measures

## **Introduction**

With reference to your email of October 5, I am sending you this report on staff-related cost-reduction measures. As requested, I have examined our HR policies concerning working hours to determine whether there is a potential for cost-reduction measures that would not involve laying off staff. I have concentrated on measures involving a voluntary reduction of working hours and the introduction of unpaid leave. Both of these would lead to savings in wage costs without creating redundancies.

## **Procedure**

The questionnaire prepared for this purpose (see Appendix) was sent to all of the company's 350 employees exploring their readiness to voluntarily reduce working hours or take unpaid leave. Replies were received from 252 workers, i.e. we had a 72% response rate. A breakdown of the responses by gender and age group can be found in the Appendix.

Following the analysis of the questionnaire results, we conducted an in-depth interview with 50 of the respondents chosen at random concerning their willingness to change their working hours.

## **Findings**

The major findings are as follows: with regard to the voluntary reduction of working hours, the attitude was on the whole positive. This was especially the case among women. In the 30–40 age category, 65% of the women expressed interest in reducing their working hours for a limited period of time, provided this would have no negative effect on their careers. The interest in unpaid leave was less widespread. However, in general 25% of the total workforce said they could imagine making use of such a measure at some time in their career.

## **Conclusions and recommendations**

Given the importance a large proportion of our workforce places on work-life balance, it can be expected that models of reduced working hours as well as unpaid leave will meet with acceptance and would be utilized. It therefore appears safe to say that the introduction of both measures will contribute considerably to cutting staff costs. In view of this, I strongly recommend that as of January 1, the company officially offer the option of reduced working hours or unpaid leave. Possible models are described in the Appendix.

I look forward to your assessment of my conclusions.

- 3 Read the section *Procedure* again. Find the words meaning the following:**

- a tool in an opinion survey \_\_\_\_\_
- percentage of people replying \_\_\_\_\_
- classification \_\_\_\_\_
- including many different aspects \_\_\_\_\_
- person answering a question in an official situation \_\_\_\_\_

# Business reports: **Expressing reference**

- 1** The table shows some common expressions of reference and how they are used. Find additional expressions of reference in the report on page 60 and add them to the table.

Function	Examples
to refer to a conversation or e-mail <i>as agreed</i>	<i>As agreed with union officials, our suppliers' production facilities are to be audited twice a year.</i>
to refer to a study or authority <i>according to</i>	<i>According to the new regulations, employees can be suspended for smoking in non-smoking areas.</i>
to direct attention to a topic <i>regarding</i> <i>pertaining to</i>	<i>The objective of the conference is to encourage employers to review their policies regarding/pertaining to handicapped workers.</i>
to introduce a new topic or refer to one previously discussed <i>as to</i>	<i>As to extending our workers' annual leave, this is not a viable alternative at the moment.</i>



- 2** Use a suitable expression from the table above in each of the following sentences.

- ..... a recent study of the WHO, the number of people suffering from severe stress owing to the pressure of constant availability has risen continuously over the past ten years.
- ..... workplace injuries, there has been a sharp decline both in frequency and severity in the past twelve months.
- ..... the report released by the government, the percentage of people in part-time and temporary work will rise in the years to come.
- ..... at our recent meeting, a committee will monitor developments over the next year.
- ....., all department heads will draw up a complete set of job descriptions.
- ..... the group of older employees, it was not found that there was a decrease in productivity after the age of 50.
- I have commissioned a study ..... the remuneration issue and expect to receive the results before February 15.



# Business reports: **Formal language**

- 1** Read the sections *Introduction*, *Findings* and *Conclusions & recommendations* a second time in the report on page 60. How does the author of the report say the following in more formal and less personal language?



## Formal style

Formal language uses typical features that make it less personal, e. g.

- The passive instead of the active voice
- Avoidance of personal pronouns
- Nouns and nominal constructions instead of verbs
- Longer words and constructions than in colloquial speech

- 1 ... to find out if we can save money without firing people .....
- 2 I prepared and sent a questionnaire to all of our staff ... ..
- 3 We talked at length to fifty of the people who had replied to the questionnaire ... ..
- 4 ... said they would like to cut their work time as long as their careers don't suffer ... ..
- 5 Fewer people wanted to know about time off without pay. ....
- 6 ... taking these steps will go a long way to help reduce wage costs .....

- 2** Find examples of the features described under *Formal style* in the sentences above.

- 3** The highlighted phrases in the following report are too informal or personal. Use the word groups in the box to replace them with more formal equivalents. Change verbs or nouns when necessary.

account for | slightly | more than half |  
total membership • afraid of |  
sanctions | employers • can be  
found | appendix • explore |  
attitudes | unions • investigate |  
possible causes for • major factor |  
failure | workers • there is | lack |  
information | general public • we |  
experience | alarming drop | union  
membership • what benefits |  
union | provide • with the purpose |  
educating | workforce | to

## Introduction

In recent years, there have been fewer and fewer people who want to join our union. In view of this, I have been asked to find out what is behind this trend and examine the options for reversing it.

## Procedure

I have analyzed the structure of our current membership. I also carried out a survey of non-unionized workers in five different industries to ask how they felt about unions. For this purpose I used a specially designed questionnaire (see Appendix).

## Findings

The age group 49–65 makes up a bit more than half of our members. Only a quarter of our membership is under 40, while the group 20–29 accounts for a mere 10%. A complete breakdown according to age, gender, job type and ethnic group is in the Appendix.

The decline in union membership was steepest in the 1990s and has been slowing since 2005.

Non-unionized workers gave various reasons for not joining a union. The most frequent was that they did not know what a union could do for them. Some said they had never been asked; others were scared their bosses might punish them if they joined a union.

## Conclusions and recommendations

It seems certain that the public doesn't know enough about unions, which is a big reason why people don't join unions. I therefore propose creating an advertising campaign to tell working people about the benefits of union membership. It would be particularly effective to target young people in part-time jobs or those working on limited contracts.

# Appendix 4 Formal and informal English

## A What do formal and informal English mean?

People change the way they speak or write depending on the situation they are in and the person they are communicating with.

Their English will be more formal or more informal.

⚠ There are not two different types of English called 'formal' and 'informal' but there are different levels or degrees of formality.

Written and spoken English can both be either formal or informal. Here are examples of very formal and very informal contexts of written and spoken English:

	formal	informal
spoken	Speech Presentation at a conference Board meeting	Lunchtime conversation with colleague Quick chat at the coffee machine
written	Contract letter Minutes of a meeting Annual report	Email to a colleague to arrange lunch Note to a colleague with a phone message

⚠ Most of the grammar in this book is 'neutral'. You can use it in almost all situations. There are notes to tell you if something is very informal or very formal.

There are no strict rules about when to use more formal or more informal English, but here are some general guidelines.

- Your English should be more formal when you are talking or writing to someone you do not know and in many work situations.
- In some organisations, you may need to communicate more formally with senior colleagues but you can be more informal with people at your level.
- Your English can be more informal when you are talking or writing to someone you know well and in social situations.
- You can communicate with the same person in both informal and more formal English depending on the situation. For example, you may speak to your boss formally in meetings at work but more informally at lunch. You might write a formal letter to a customer or supplier with a contract, but also write a more informal email to arrange to meet for dinner.

⚠ Informal English is not bad English. It can be just as polite as more formal English. Using it in the right situations can make you sound more friendly, fluent and natural.

## B What types of grammar and vocabulary do people use in formal and informal situations?

**B1 Contractions and full forms of verbs** (◀ see Units 1–20) (*I'm / I am; don't / do not; haven't / have not*, etc.)

- You can use contractions in all speaking situations and in many types of writing (e.g. emails).
- People use full forms mostly in very formal letters, reports, contracts and some formal speaking situations such as speeches and presentations. But it is difficult to speak using only full forms and you could sound slightly strange.

	more formal	more informal
Contractions <i>I'm, don't, hasn't</i> , etc.	Fine to use <i>I'm, don't, hasn't</i> , etc. in speaking.	Fine to use <i>I'm, don't, hasn't</i> , etc. in speaking.
Full forms <i>I am, do not, has not</i> , etc.	Use mainly in writing, (e.g. letters, contracts, reports).	Do not use full forms too much in either speaking or writing.



## B2 Verbs and tenses

- In formal written letters the simple forms of verbs often sound more formal than continuous forms.
- The passive is more common in formal written English than in spoken or informal English. ◀ See Unit 19 (The passive 1) and Unit 20 (The passive 2).
- Some modal verbs sound more formal, for example, in suggestions, requests and instructions. ◀ See Unit 14 (Modals 2) and Unit 15 (Modals 3).
- People often use the past tense in polite requests and questions. ◀ See Unit 5 (Past simple and continuous).

	more formal	more informal
simple or continuous	<i>I <b>look</b> forward to meeting you. We <b>hope</b> to complete the project by May.</i>	<i>I'm <b>looking</b> forward to meeting you. We <b>are hoping</b> to complete the project by May.</i>
passive	<i>The contract <b>was signed</b>.</i>	<i>They <b>signed</b> the contract.</i>
modal verbs	<i><b>Shall</b> we meet at 10? <b>Would/Could</b> you look at the figures? <b>May</b> I come in?</i>	<i><b>How about</b> meeting at 10? <b>Will/Can</b> you look at the figures? <b>Can</b> I come in?</i>
past tense	<i><b>Did</b> you <b>want</b> to talk to me now?</i>	<i><b>Do</b> you <b>want</b> to talk to me now?</i>

## B3 Reported speech

- *Like* is very informal when it is used for reporting speech.
- The past continuous is not used in formal writing to report speech. ◀ See Unit 23 (Reported speech 1).

	more formal	more informal
<i>like</i>	<i>He <b>said</b>, 'That's impossible!'</i>	<i>He's <b>like</b>, 'That's impossible!'</i>
past continuous	<i>The CFO <b>explained</b> the new tax rules.</i>	<i>The CFO <b>was telling</b> us about the new tax rules.</i>

## B4 'Simple grammar'

- People often use shorter, simpler grammar in informal communication. ◀ See Speaking strategies 4 (Simple spoken grammar).
- There are a number of very common structures in spoken English that some people think are incorrect or mistakes. They should not be used in writing. For example, *there is/was* + a plural noun, *less* + plural noun, *who* instead of *whom* ◀ See Unit 38 (Relative clauses 2).

	more formal	more informal
Simple grammar	<i><b>Are you leaving</b> now? <b>Do you want</b> a coffee?</i>	<i><b>You leaving</b> now? <b>Want</b> a coffee?</i>
Grammar 'mistakes'	<i>We had <b>fewer requests</b> for samples this month. <b>There were a lot of people</b> at the shareholders' meeting.</i>	<i>We had <b>less requests</b> for samples this month. <b>There was a lot of people</b> at the shareholders' meeting.</i>



## Other

- Some phrasal verbs can be more informal, for example, *give up* (stop), *get out of* (avoid).
- People think of some uses of *get* as informal. *Have* is more formal than *have got*.
- *Stuff* is a very informal word; *things* sounds better in formal situations. ◀ See Speaking strategies 9 (Vague language 1).
- Some determiners and expressions such as *loads* (of) and *a bit* (of) are informal. ◀ See Speaking strategies 10 (Vague language 2) and Unit 31 (Comparisons 1) and Unit 35 (Quantifiers).
- People use *most* + adjective instead of *very* or *really* in formal situations.
- People use more nouns in very formal and especially written English, where they would use verbs in more informal and spoken English.
- Conjunctions such as *therefore*, *as a result*, and *consequently* and *in order to* are more common in formal business language, especially writing. ◀ See Unit 40 (Conjunctions and linking words 2).

	more formal	more informal
phrasal verbs	<i>They won't tolerate another delay.</i>	<i>They won't put up with another delay.</i>
get	<i>I received your letter today.</i> <i>We purchased/bought our cars in Belgium.</i> <i>We have several problems.</i>	<i>I got your letter today.</i> <i>We got our cars in Belgium.</i> <i>We've got several problems.</i>
thing/stuff	<i>Are these your things here?</i>	<i>Is this your stuff here?</i>
quantifiers	<i>There are a number of MBAs on our staff.</i>	<i>There are loads of MBAs on our staff.</i>
most	<i>I would be most grateful for your advice.</i>	<i>I'd be very/really grateful for your advice.</i>
nouns and verbs	<i>What are your recommendations?</i> <i>Completion of the building work will be on time.</i>	<i>What do you recommend?</i> <i>We'll finish the building work on time.</i>
conjunctions	<i>Jen's performance has been excellent.</i> <i>Therefore / As a result / Consequently we recommend her promotion to senior analyst.</i>	<i>Jen's done a great job this year so I think we should promote her to senior analyst.</i>
in order to / to...	<i>Staff were laid off in order to make savings.</i>	<i>Staff were laid off to save money.</i>