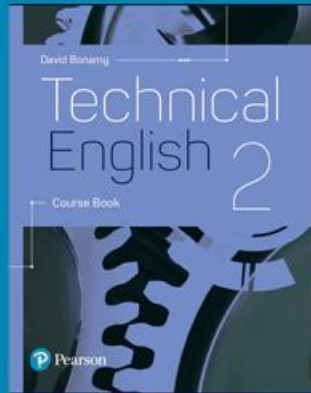
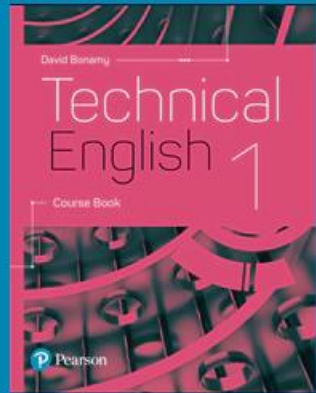


Technical English at a Glance



Technical English 2nd edition

What we do



Representation of **Pearson** in CZ and SK

Distribution of ELT materials (all publishing houses)

Pearson English Readers (Penguin Readers)

Distribution of educational games Regipio

Methodological support



Seminars, webinars and conferences

Teaching tips for teachers/students

Sample lessons at schools

ELT consulting

Teacher's set for free

Free samples

venturesbooks.cz

venturesbooks.sk

Distribution



Loyalty program for schools

Reservation of books

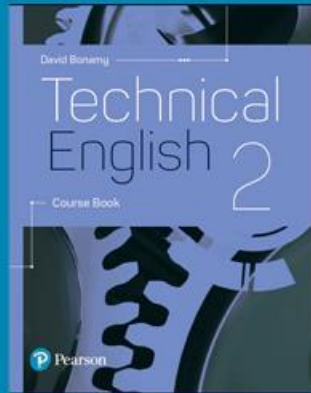
Purchase with a bonus (May- September)

Individual price offer

shop.venturesbooks.cz

shop.venturesbooks.sk

Technical English at a Glance



Technical English 2nd edition

Agenda

- Basic information
- Components presentation
- Summary

Basic information about Technical English 2nd

For

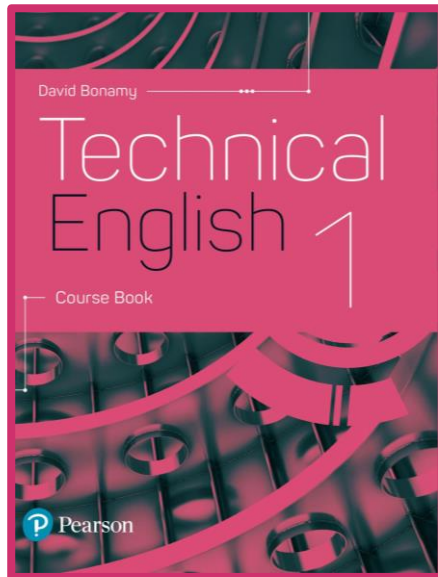
- technical or vocational students
- technical employees
- in-company trainees

Who

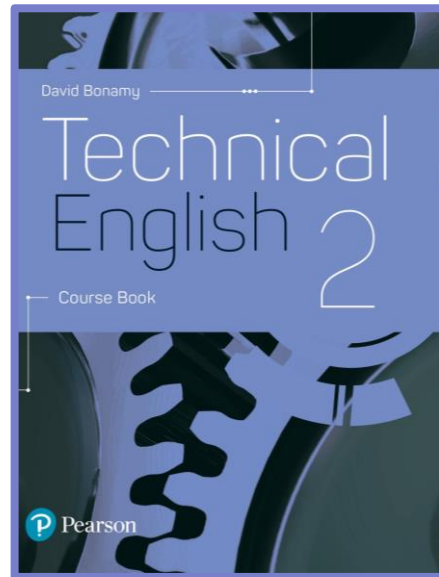
- need to communicate in technical and industrial specialisations



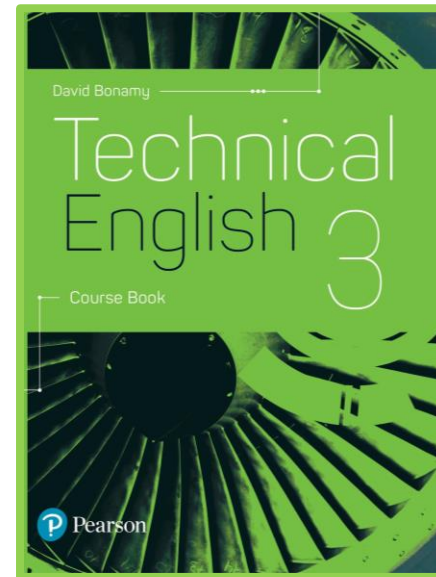
4 levels ESP course for 16+



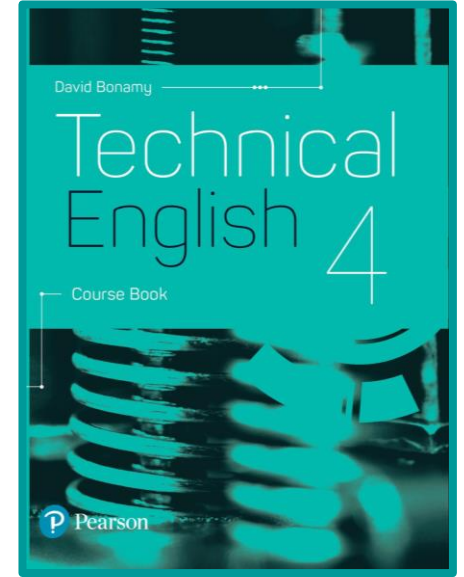
**CEFR A1
GSE 20-32**



**CEFR A2
GSE 30-44**



**CEFR B1/B2
GSE 43-61**



**CEFR B2/C1
GSE 60-80**

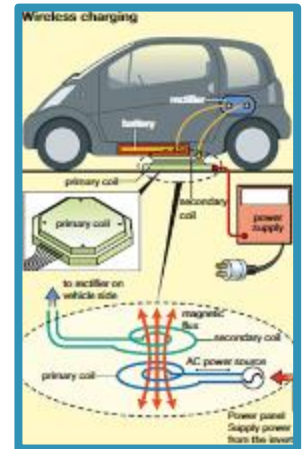
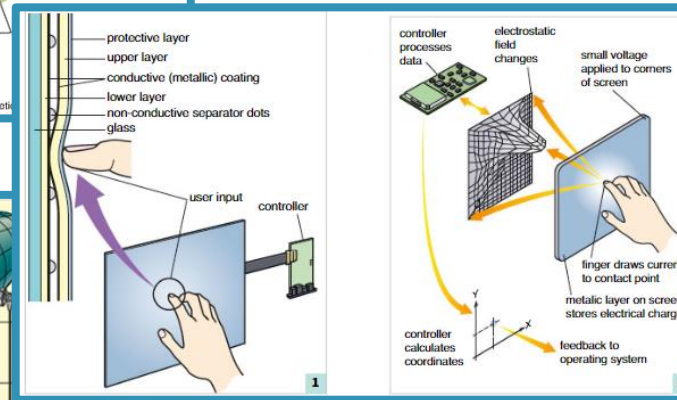
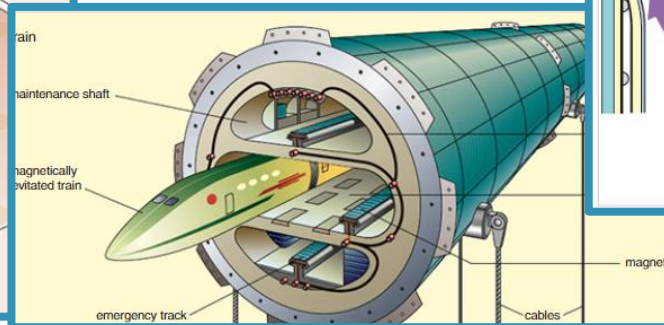
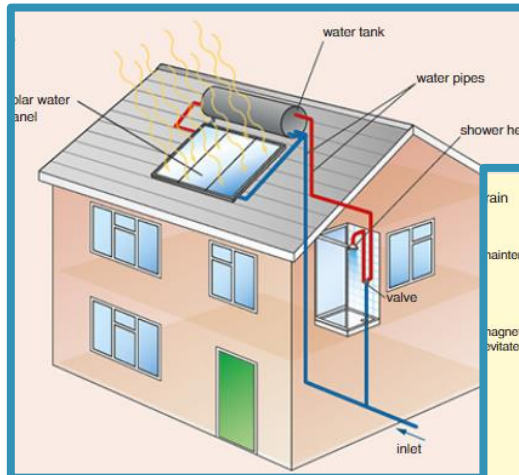
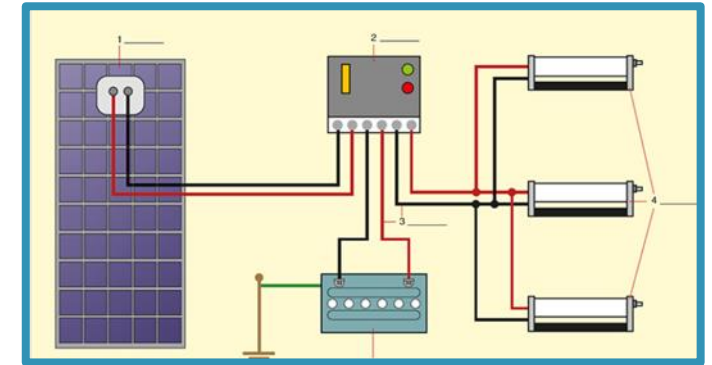
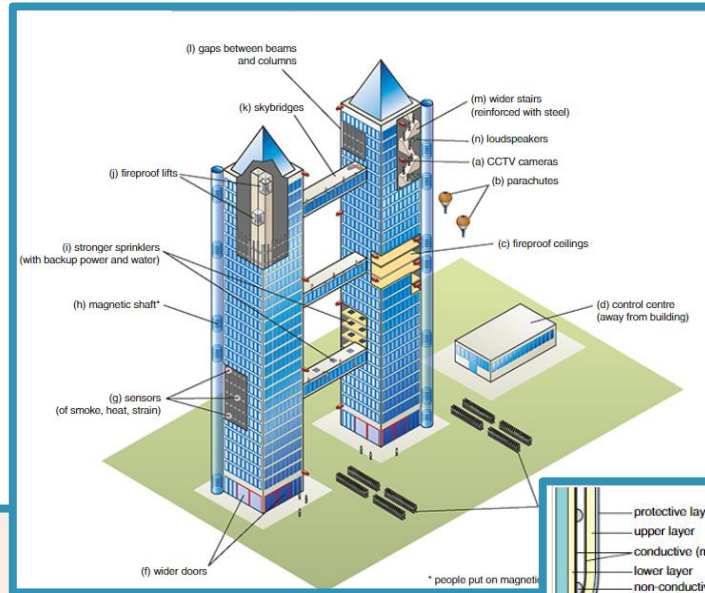
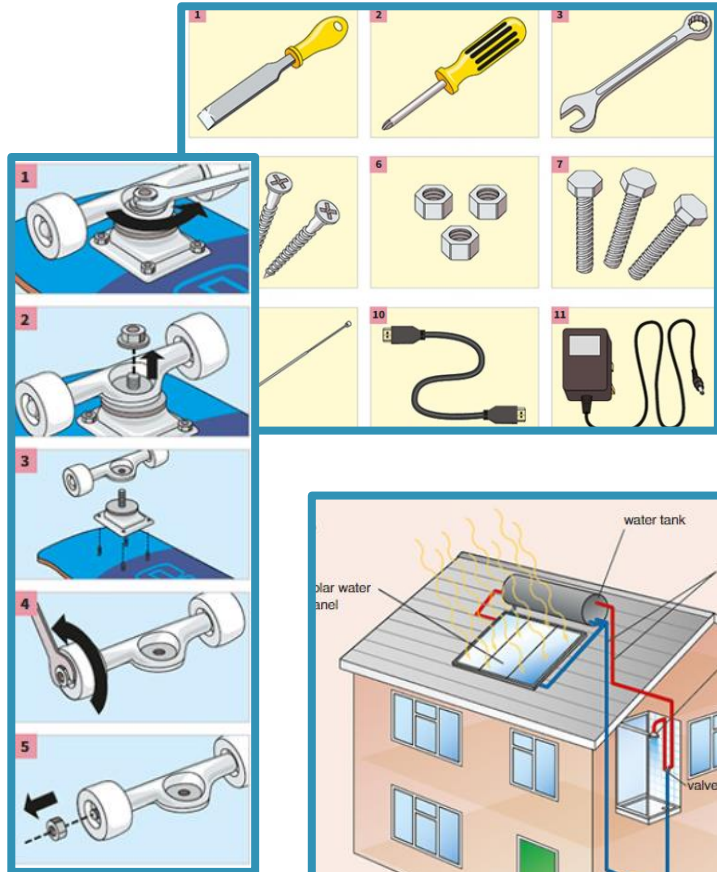
70 – 90 hours per level

British English

What makes Technical English great?

- clear language presentation helps students in communication
- tasks enable learners to use new language hands-on
- tasks are based on authentic work situations
- technical background information for not technical experts

Topics



Language

- structures common to all technical specialisations

- focus on technical language comprehension and communication

- motivating texts and clear illustrations

- all language skills are regularly practiced

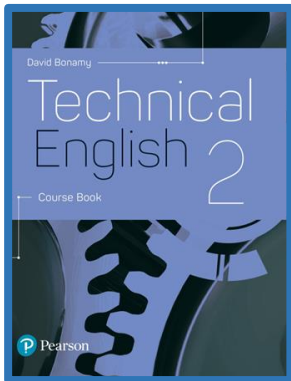
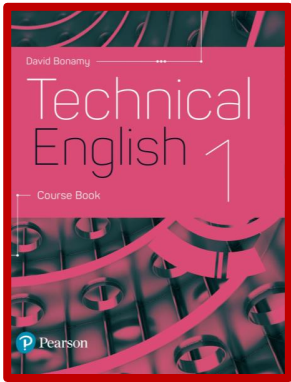
- easy language with challenging tasks

- wordlist in the Workbook and Teacher's Book

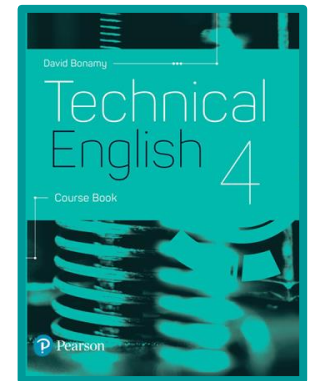
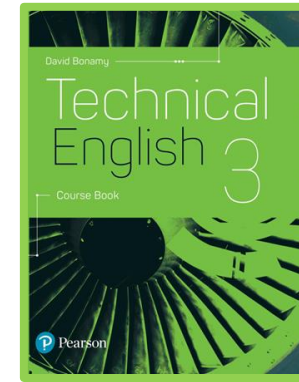
- built-in audio element to hear real-world English

- differences between British and American English

Course Book and eBook

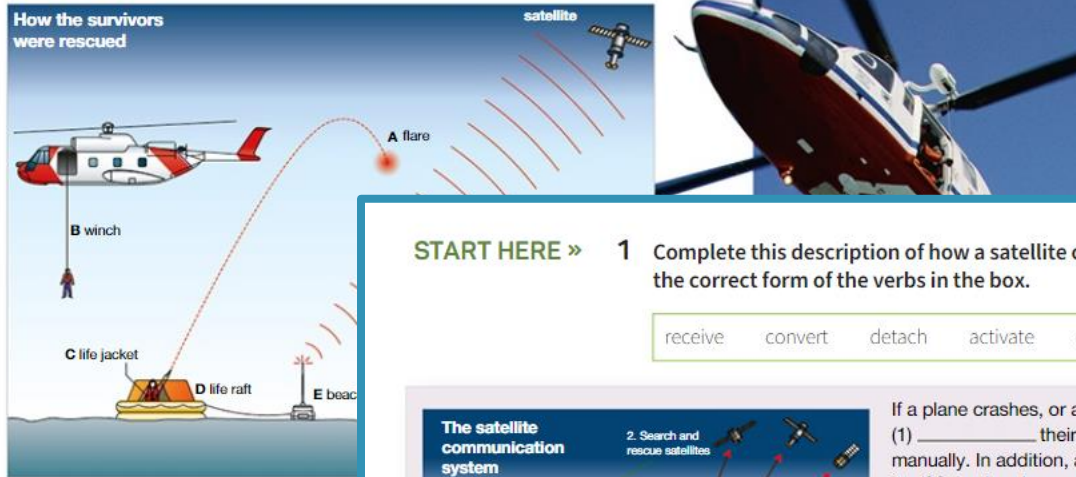


- 12 Core units
- 3 lessons per unit
- 6 Review units
- Grammar/Language summary
- Reference section
- Extra material
- Speed search
- Audio script



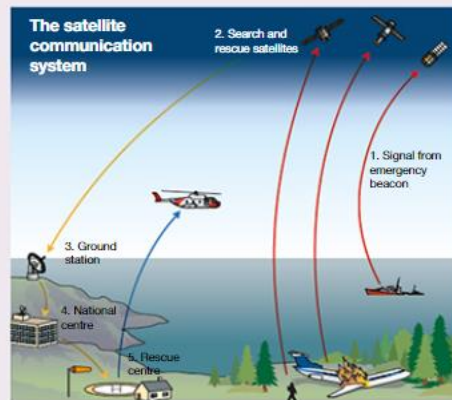
START HERE

START HERE » 1 Work in pairs. Answer the questions about the safety devices in this illustration of an air-sea rescue.



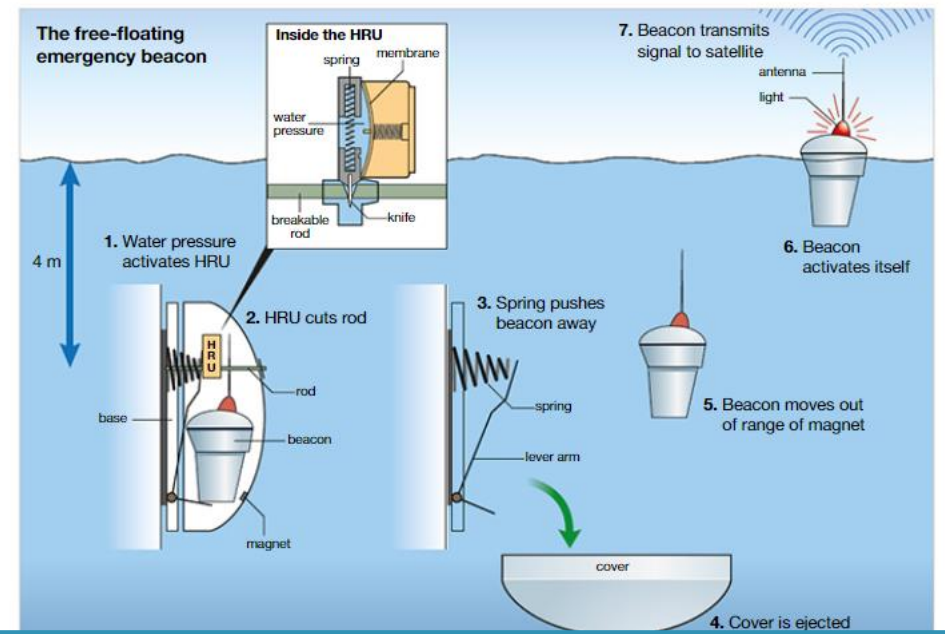
START HERE » 1 Complete this description of how a satellite communication system works. Use the correct form of the verbs in the box.

receive convert detach activate carry out transmit



If a plane crashes, or a ship sinks, the survivors (1) _____ their personal emergency beacons manually. In addition, an automatic beacon (2) _____ itself from the plane or ship and switches on. The beacon then (3) _____ a signal to the rescue satellites. The satellites (4) _____ the transmission and send the beacon's signal to a ground station. The ground station then processes the signals (that is, it (5) _____ the signals into data) and passes on the data about the beacon to a national centre. The national centre forwards this data to the rescue centre nearest to the crashed plane or sinking ship. The rescue centre then (6) _____ the beacon and sends out a rescue team, which (7) _____ the rescue.

START HERE » 1 Work in small groups. Study the diagram and discuss the questions below.



VOCABULARY

VOCABULARY » 2 With your group, match synonyms a–e with the words in italics in 1–5.

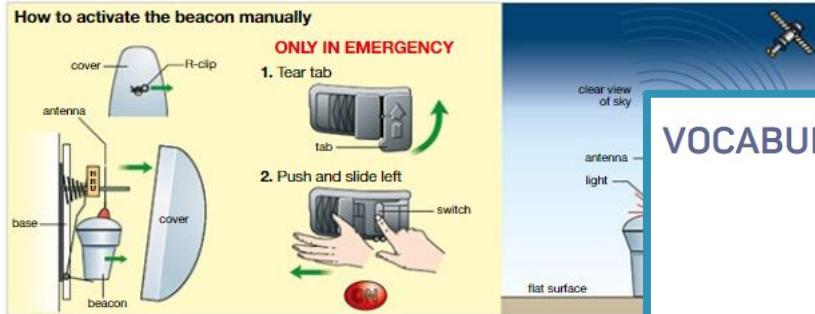
- | | |
|--|---------------------------------|
| 1 The beacon is <i>submerged</i> . | a) frees it (allows it to move) |
| 2 The rod breaks and this <i>releases</i> the cover. | b) away from the force of |
| 3 The <i>parachute</i> (falls) <i>under water</i> . | c) under water |
| 4 The rocket <i>rests</i> itself on the ground. | d) rests itself on |
| 5 The <i>parachute</i> is <i>blown</i> away by the wind. | e) blown away |

VOCABULARY » 3 Match the phrases 1–6 with the same or similar meanings a–f.

- | | |
|------------------------|------------------------|
| 1 eject the seat | a) stop it from moving |
| 2 stabilise the rocket | b) go down |
| 3 deploy the parachute | c) make it steady |
| 4 restrain the body | d) throw it out |
| 5 descend | e) open it and use it |
| 6 ascend | f) go up |

VOCABULARY » 5 Study the illustrations and complete the instructions below with the verbs in the box.

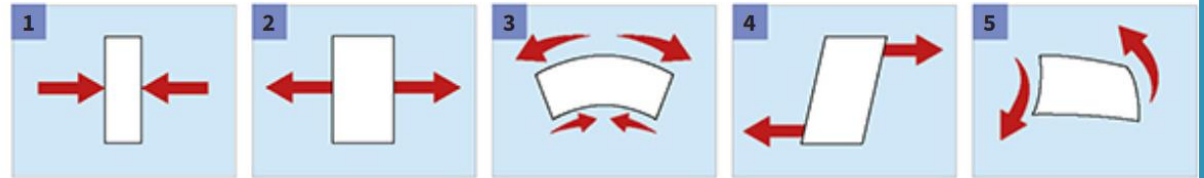
ensure tear off touch remove slide place ~~pull~~ push



If the vessel is not sinking, but there is some immediate danger, you can activate the beacon manually. Follow these steps:

1. pull the R-clip.
2. tear off the cover.
3. tear off the tab.
4. push the switch.
5. slide the beacon.

VOCABULARY » 6 Match the diagrams with (a) the names of the forces and (b) their descriptions.



VOCABULARY » 7 Complete these sentences, choosing the correct form in brackets.

Note:

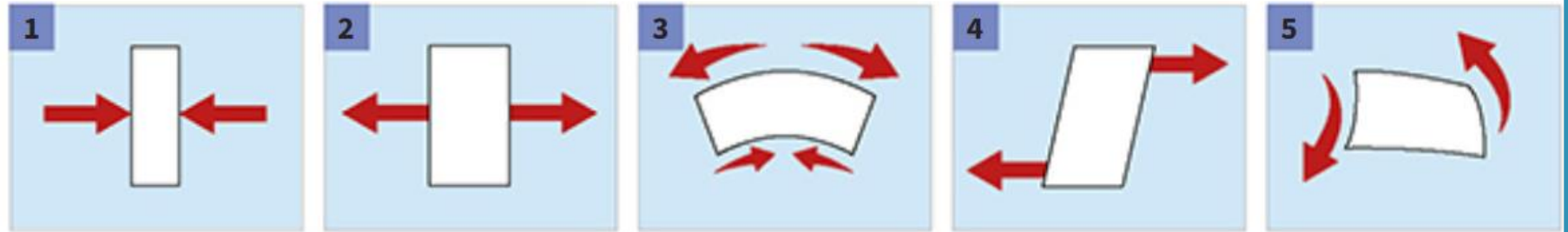
- reinforced concrete = concrete which has been reinforced (passive meaning)
- reinforcing steel = steel which reinforces something (active meaning)

- 1 A rebar is a (reinforced/reinforcing) steel bar that strengthens concrete.
- 2 This (reinforced/reinforcing) plastic has been strengthened by carbon.
- 3 They are using (pressurised/pressurising) oxygen in those tanks. The gas was compressed before going into the tanks.
- 4 We need to fit a (pressurised/pressurising) valve onto this pipe, to create some pressure in the system.

ion, shear, tension, torsion
 ing together; sliding in opposite directions; stretching or pulling
 eezing one side + stretching the other side

Test Yourself 1 😊

VOCABULARY » **6** Match the diagrams with (a) the names of the forces and (b) their descriptions.



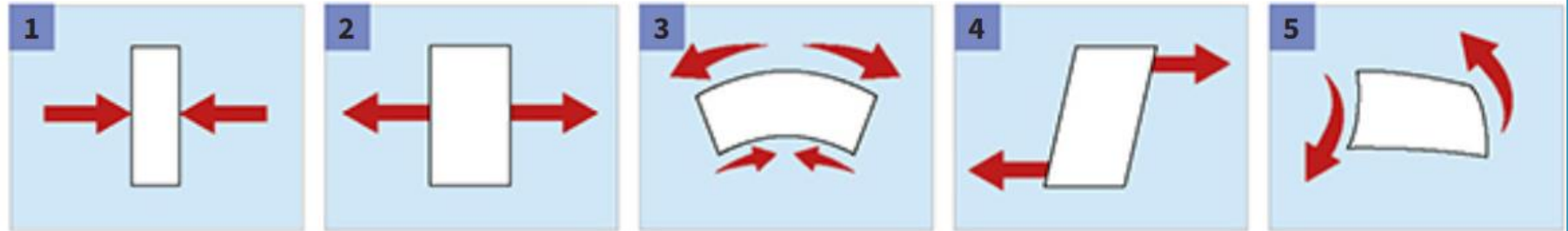
(a) bending, compression, shear, tension, torsion

(b) squeezing or pressing together; sliding in opposite directions; stretching or pulling apart; twisting; squeezing one side + stretching the other side

a/ bending b/ compression c/ shear d/tension e/torsion

Test Yourself 1 😊

VOCABULARY » 6 Match the diagrams with (a) the names of the forces and (b) their descriptions.



(a) bending, compression, shear, tension, torsion

(b) squeezing or pressing together; sliding in opposite directions; stretching or pulling apart; twisting; squeezing one side + stretching the other side

a/ bending b/ compression c/ shear d/tension e/torsion

1 - b 2 - d 3 - a 4 - c 5 - e

LANGUAGE

LANGUAGE »

Modals and semi-modals followed by *active* verbs:

You	<i>must/should</i>	<i>wear your hard hats.</i>	You	<i>mustn't/shouldn't</i>	<i>take them off yet.</i>
You	<i>have to/need to</i>	<i>silence your mobiles.</i>	You	<i>don't have to/need to</i>	<i>switch them off.</i>

Modals and semi-modals followed by *passive* verbs:

<i>Helmets</i>	<i>must/should</i>	<i>be worn.</i>
		<i>be silenced.</i>

✓ **READING** » 8 Read the manual. Which actions 1–12 are essential, recommended or unnecessary?

The complete brake system (including discs, callipers, pads, pistons and brake lines) should be inspected at least once a year (1). The fluid level should be topped up and the handbrake should be adjusted at the same time (2). Brakes should normally be replaced after 20,000–30,000 kilometres (3). Of course, they don't have to be replaced if inspection shows they are in good working order (4). However, brakes must not be used when the brake pads are below the minimum thickness (5). Brake lines should be drained, and the brake fluid replaced, at least every two years (6). In addition to the above, always monitor your braking and notice anything unusual in the brakes while you are driving.

For example, if your brake pedal feels soft or spongy when you press it, it is possible that air has entered the brake lines. If that is the case, the brake lines need to be drained and have to be refilled with new brake fluid (7). If the brakes make a loud grinding sound, this probably means that the brake pads are very worn. When this happens, the car must not be driven any further (8). The pads must be replaced and the discs have to be inspected for damage (9). If there is damage, the discs need to be replaced or mended (10). On the other hand, if your brakes give a light squealing noise, this may not be serious. There may be water or dust on the brake pads and discs. If so, the pads probably do not need to be replaced (11). However, they should still be inspected (12).

3  5.4 Listen to this discussion and check your answers to 2.

4 Listen again and answer these questions.

- 1 What two things does the mechanic say the driver should do?
- 2 What single thing does the mechanic say the driver must do?
- 3 What does he say are three possible causes of a soft or spongy brake pedal?
- 4 Why are the brake pads made of a softer material than the disc?

6 Make some recommendations for improvements to your college or workplace.

Example: *Students shouldn't bring food into the classroom.*

SPEAKING

10 Complete this dialogue using the second conditional.

A: If you (1) were (be) Head of Space Research at NASA, what (2) would your research priorities be (research priorities / be)?

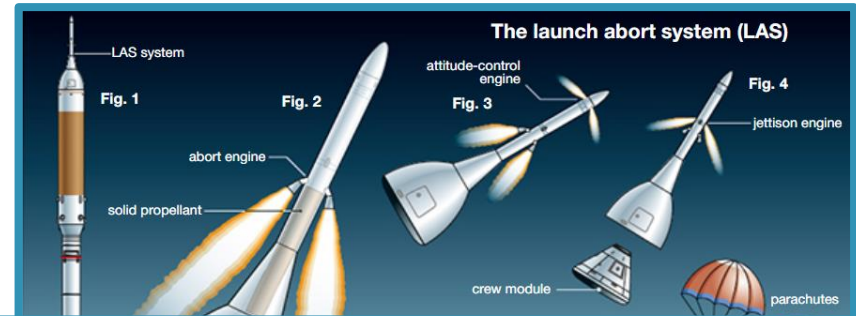
B: Head of Space Research at NASA! That's impossible. I'm only a junior technician in a small aircraft company.

A: I know. So am I. But think about it: if you (3) _____ (run) NASA's research programme, what (4) _____ (you / do)?

B: Well ... I think I (5) _____ (develop) the International Space Station into a world-class medical laboratory. How about you? What (6) _____ (you / focus) on?

A: Well, if I (7) _____ (be) the leader of NASA's research team, first I (8) _____ (send) more spacecraft to Saturn.

11 Work in pairs. Practise the dialogue in 10.



SPEAKING » 4 Work in pairs. Ask and answer questions about the illustration in 1 using the phrases about parts and their functions in 3. Use the second conditional.

Examples of questions: *What would the crew do if the jettison engine didn't work? If the module didn't have a protective cover, what would happen to the crew?*

10 Work with the whole class. Discuss the question 'Are cars too safe?'. The class should divide into two groups with opposite points of view.

Group 1: Make arguments that everything possible should be done to protect drivers, passengers and other road users by developing automatic safety devices in cars and systems that automatically take control of the car.

Group 2: Make arguments for the opposite point of view, that too many automatic safety devices in a car take away the driver's responsibility. They make the driver feel too safe and protected, which is dangerous. This group would prefer feedback systems which warn the driver about dangers, but do not take corrective action.

5 Work in pairs. You are a team of designers. You have designed a hybrid hard drive for a design competition you want to enter. Discuss and plan your proposal. Use the information at the back of the book, in the photo and from the table in 4 above.

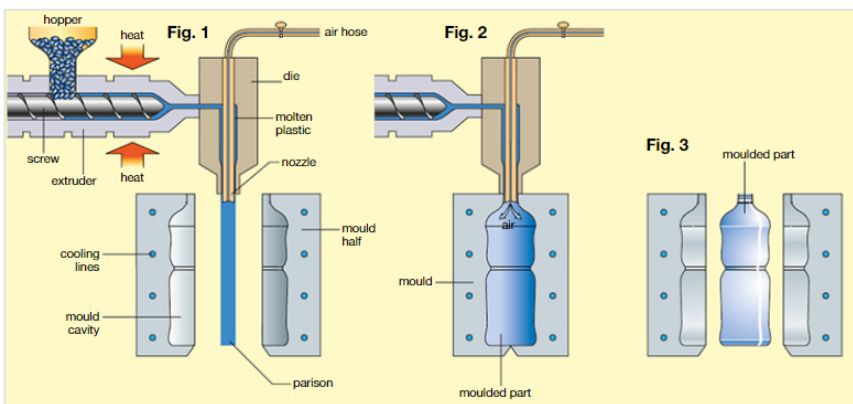
Student A: Read your information on page 109.

Student B: Read your information on page 110.

Extra material

LISTENING

LISTENING » 2 With your partner, study the illustrations and then rearrange the notes below into the best order for a talk on extrusion blow moulding.



The extrusion process

movement of warm, soft molten polymer in a cylinder

extrusion of molten polymer into a parison

heating and melting of polymer pellets

transfer of polymer pellets from hopper to extruder

movement of cold polymer from mould to cooling lines

- 1 Show your knowledge about the company.
- 2 Prepare a list of questions you would like to ask the interviewer.
- 3 Act as if you're not really interested in the job.
- 4 Answer only Yes or No.
- 5 Find out about the company and the job before your interview.
- 6 Talk negatively about your previous employer.
- 7 Be positive and honest about yourself.
- 8 Think about the questions the interviewer might ask you.
- 9 Ask questions about the job.
- 10 Check the job advert and think how your CV matches what they want.



2 **4.3** Listen to part of an interview Reme Gomez has for a new job. Tick the advice in 1 which she follows.

6 Listen again. Note at least four details which are different from the newspaper article in 2. (Notice what the official says and also what he doesn't say.) Discuss your answers with a partner and make notes.

inspector carried out a surprise security check disguised as a passenger. The 'passenger' managed to pass through the security checkpoint carrying a knife, according to sources in the investigation team who spoke to *The Mail* yesterday.

The source explained that before arriving at the airport, the passenger had attached a knife to his lower leg underneath

detector. When the detector beeped, the security official instructed the passenger to stand aside and told him to raise his arms for a manual search.

But the passenger ignored the instruction and told the official that he had recently broken his leg. He explained that the surgeon had put a metal rod inside his knee, which always made metal

detectors beep. Although the

that he could go. The passenger then walked quickly away from the security checkpoint into the waiting area. The official's supervisor saw this incident, and immediately followed the passenger into the waiting area, where he ordered him to stop. Then the passenger informed the supervisor that he was a security inspector.

3 Listen again and complete the interviewer's notes of the interview.

Name – Reme Gomez

Present job – _____

Years in: present job – _____ apprenticeship – _____

Qualification – _____

When gained qualification – _____

Studying for diploma (part-time) now

Technical skills – (1) accurate _____ (2) CAD/CAM

Personal skills – works hard, punctual and _____

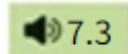
Interpersonal skills – willing to learn, good _____

Test Yourself 2 ☺



LISTENING »

3



Listen to this progress report and complete the checklist. Write *D* (job done), *I* (job in progress) or *P* (job planned).

Task: researching ...

.1 passwords

.2 PINs

.3 voice recognition

.4 fingerprint scanning


.5 optical scanning

.6 capacitive scanning

.7 iris scanning



Test Yourself 2


LISTENING » **3**  7.3 Listen to this progress report and complete the checklist. Write *D* (job done), *I* (job in progress) or *P* (job planned).

Task: researching ...

- | | | | |
|--------------------------|-------------------------------------|-------------------------|-------------------------------------|
| .1. passwords | <input checked="" type="checkbox"/> | .5. optical scanning | <input checked="" type="checkbox"/> |
| .2. PINs | <input checked="" type="checkbox"/> | .6. capacitive scanning | <input type="checkbox"/> |
| .3. voice recognition | <input checked="" type="checkbox"/> | .7. iris scanning | <input type="checkbox"/> |
| .4. fingerprint scanning | <input type="checkbox"/> | | |

D - 1,2,3,5

Test Yourself 2 😊


LISTENING » 3  7.3 Listen to this progress report and complete the checklist. Write *D* (job done), *I* (job in progress) or *P* (job planned).

Task: researching ...

- | | | | |
|--------------------------|-------------------------------------|-------------------------|-------------------------------------|
| .1. passwords | <input type="checkbox"/> | .5. optical scanning | <input type="checkbox"/> |
| .2. PINs | <input type="checkbox"/> | .6. capacitive scanning | <input checked="" type="checkbox"/> |
| .3. voice recognition | <input type="checkbox"/> | .7. iris scanning | <input type="checkbox"/> |
| .4. fingerprint scanning | <input checked="" type="checkbox"/> | | |

1 - 4,6

Test Yourself 2 😊

LISTENING » 3  7.3 Listen to this progress report and complete the checklist. Write *D* (job done), *I* (job in progress) or *P* (job planned).

Task: researching ...

.1. passwords

.2. PINs

.3. voice recognition

.4. fingerprint scanning

.5. optical scanning

.6. capacitive scanning

.7. iris scanning

P - 7

READING



The Detektit 2000 airport metal detector

The Detektit 2000 walk-through metal detector (WTMD) detects all metal objects, but ignores harmless ones. It has 33 separate detection zones.

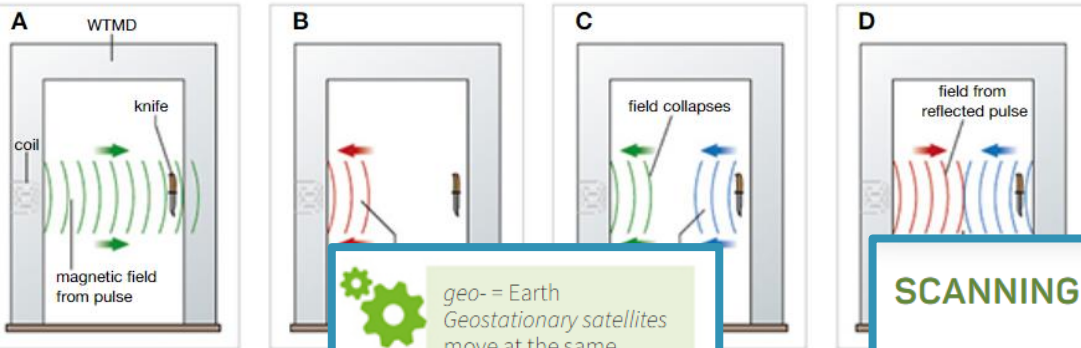
The detection zone shows the *vertical* location of the metal object (for example, 0.5 m above the ground), and the strength of the signal shows the *horizontal* location (for example, left leg or right leg). In other words, it can detect the exact location of the items on

If the magnetic field meets a metal object (such as a knife or gun), it produces an electrical current in the object, which acts as a resistor. This generates a magnetic field around the metal object.

Meanwhile, as the magnetic field of the coil collapses, it creates a second, very short electric current (called the *reflected pulse*).

The magnetic field from the metal object interferes

3 Read the product review in detail and put these illustrations in the correct sequence.



geo- = Earth
Geostationary satellites move at the same speed and in the same direction as the Earth. When we observe them, they seem to be *stationary* or not moving.

The Cospas-Sarsat system is an international search-and-rescue system which consists of a network of satellites in space and control centres on Earth.

The components of the system are:

- radio beacons, which (1) _____
- satellites, which (2) _____
- ground stations, where (3) _____
- national centres, from where (4) _____
- rescue teams, who (5) _____

The system uses two types of s

- satellites in geostationary Earth orbit
- satellites in low-altitude Earth orbit



- A are closer to the Earth and cover polar regions.
- B information about the emergency is sent to the rescue teams.
- C are at a high altitude and cover a wide area.
- D transmit 406 MHz signals in an emergency.
- E signals from the satellites are processed.
- F pick up the signals from the beacons.
- G receive the information and carry out the search and rescue.

SCANNING »

2 Practise your speed reading. Look for the information you need on the SPEED SEARCH pages (115–117). Try to be first to complete these statements.

- 1 The earliest fingerprints were made in _____, about _____ years ago.
- 2 Over _____% of people have the 'loop' fingerprint pattern.
- 3 Identical twins *share/do not share* the same fingerprints.

WRITING

WRITING » 6 Produce an operating manual with your group for a device you know about.

- 1 Agree on the device you want to write about.
- 2 Divide up the work. Each group member produces a different section of the operating manual: (1) *how it works*, (2) *operating instructions* and (3) *labelled diagrams*.
- 3 Check each other's work and then produce a single document from the group.

WRITING » 6 In pairs, write your proposal for the design competition. Include a short explanation of:

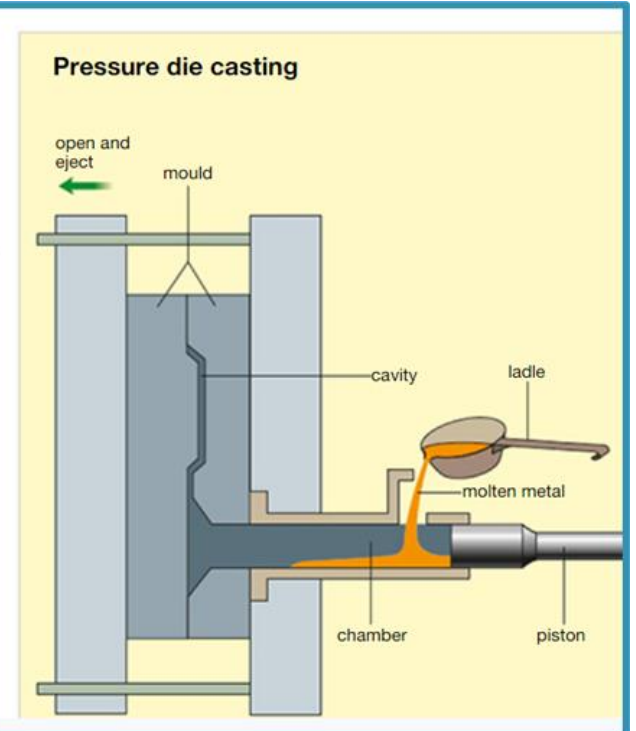
- how your design meets a need of computer users
- how your design uses the strengths and avoids the weaknesses of the chosen material

WRITING » 7 Study the diagram and the notes below and write an explanation of the process of pressure die casting. Use *First*, *Then*, *Next* and *Finally*, and the passive where appropriate.

Begin: *First*, some metal is heated until it melts. *Next*, the molten metal ...

Pressure die casting

- heat metal until it melts
- pour molten metal into chamber
- piston moves along chamber
- piston pushes molten metal under pressure into cavity
- cavity is between two halves of mould
- molten metal fills cavity
- metal cools and becomes solid
- open mould



REVIEW UNIT – 6 per level

PROJECT » 15 Research an important process in your own technical field and produce:

- a flow chart of the process
- a labelled diagram of the main equipment and its controls
- a description of how the process works
- a user's guide of how to operate the equipment/controls

PROJECT » 15 Research a job and an employer you are interested in.

- Search for a suitable job advert.
 - Research the company which placed the advert.
 - Think of questions the interviewers may ask and prepare answers.
 - Prepare a list of the questions you would like to ask.
 - Write a letter of application to accompany your CV.
- Put everything into a special folder. Keep it for future reference.

PROJECTS » 18 Research one of the following:

- 1 A technology or industry which has had safety issues or a serious incident involving health and safety. Find out what happened and why it happened. Then work out some rules to prevent similar problems in the future. Write up your findings and recommended safety rules.
- 2 A national or international project which has led to a change in technology to counteract current and future problems. Write up your findings and recommended safety rules. In your write-up, indicate (a) the reasons for the change and (b) a schedule for the future plan.

PROJECTS » 14 Research one of the following and then present your information in a short talk to the class or to a group.

- 1 A serious incident or accident that happened in your industry. Write the main points under the headings of an investigative report.
- 2 Failures of design, construction, engineering or marketing. List (a) what went wrong, (b) why they went wrong, (c) what should have happened and (d) what would have changed if different decisions had been made.

GRAMMAR/LANGUAGE SUMMARY

Grammar summary

A Grammar

Present simple

Positive		
He/She	works/studies	at Oxford University.
I/You/We/They	work/study	
The water	flows	into the tank.
The electrons	flow	along the wire.

Negative				
I/We/They	do	not	work	on an oil platform.
He/She	does			

The present continuous is used to talk about

- (1) things happening now (when speaking): *I'm taking the wheel now.*
- (2) things happening for a limited period: *She's studying electronics this year.*
- (3) plans or intentions for the future: *We're going home tomorrow.*

Future

will and *won't* are used to talk about things that we think are certain to happen in the future: *The train from London will arrive at 10.30.* *I won't be at the meeting.* *I'll be there.* The present continuous or going to is used to talk about plans or intentions for the future: *We're going to get married next year.*

Language summary

A Grammar

Present simple

The present simple is used to talk about:

- regular or routine events: *Hans works with robots every day.*
- job descriptions: *The chief electrician supervises a team of four electricians.*
- processes: *The water flows from the tank into the solar water panel.*

Present continuous

The present continuous is used to talk about:

- activities while the speaker is speaking: *Look. I'm taking the wheel off now.*

different form: *bend, bent, bent; break, broke, broken.* A list of irregular verbs where the form changes can be found on page 104.

Present simple passive

The present simple passive uses *is/are* + past participle. In an active sentence, the subject is the same as the agent. The subject does the action: *A rotating screw (subject = agent) pushes the plastic pellets (object).*

However, in a passive sentence, the subject is NOT the same as the agent. The subject doesn't do the action. The agent does the action to the subject:

The plastic pellets (subject) are pushed by a rotating screw (agent).

REFERENCE SECTION

1 Abbreviations

Length

mm	millimetre(s)
cm	centimetre(s)
m	metre(s)
km	kilometre(s)

Area

mm²	square millimetre(s)
m²	square metre(s)
km²	square kilometre(s)

Frequency

Hz	hertz
kHz	kilohertz
MHz	megahertz
Note:	k (kilo = thousand) is normally lower case M (mega = million) is normally upper case G (giga = billion) is normally upper case

Some other abbreviations used in this book

am	in the morning
AC	alternating current
approx.	approximately
cc	(document) copied to; cubic centimetres (engine capacity)
CCTV	closed-circuit TV
CD	compact disc
CD-ROM	compact disc, read-only memory
CPR	cardio-pulmonary resuscitation

2 Symbols

Mathematical and other symbols

+	plus; positive
-	minus; negative
x	times; multiplied by (also*)
÷	over; divided by (also/)
±	plus or minus

3 Fractions

Examples: Ten percent of the students study electronics.
Two-thirds of them study electrical engineering.

1/4	(a/one) quarter	0.25	25%
1/2	(a/one) half	0.5	50%
3/4	three-quarters	0.75	75%
1/3	a/one-third	0.33*	33.3%*
2/3	two-thirds	0.67*	66.7%*

4 British and American English

Here are some of the words used in this book, but there are many more. You can find more at the back of *Longman Technical English Level 1*. Key the words *American British English* into an internet search engine or *Wikipedia* to find more examples.

British English

analogue
block of flats
catalogue
cross roads
crude oil
curriculum vitae (CV)

American English

analog
apartment building
catalog
intersection
petroleum
résumé

EXTRA MATERIAL

Task exercise 6 page 7

Find instructions for your job.

How to ...

change a wheel – clean a spark plug –
check the oil level

- Put the oil filler cap on.
- Clean the spark plug.
- Take out the dipstick.
- Clean the oil off the dipstick.
- Take off the spark plug cover.
- Lift up the car.
- Take out the dipstick again.
- Loosen the spark plug.
- Check the oil level.
- Lower the car.
- Loosen the wheel nuts.
- Place a iack under the car.

Task exercise 6 page 25

Student A

You think that the Land Rover team. Study this information to choose this car.

Criteria	Land Rover
Height	1969 m
Passengers	9
Price	£53,260
Engine size	2.9 litre
Towing power	3500 kg
Ground clearance	226 mm
Max speed	117 km/h
Fuel consumption	7.8 km/l
Wheelbase	2587 m
Tank	89 L

11 Design 2 Eco-friendly

Task exercise 4 page 87

5 Safety 3 Rules

Speaking exercise 6 page 41

Group A

Rules of the air (Part 2): Overtaking or passing another aircraft

The following rules apply when two aircraft approach each other at the same altitude.

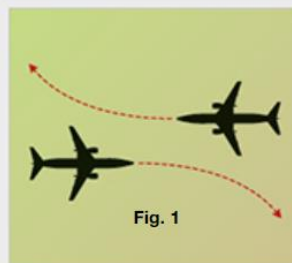


Fig. 1

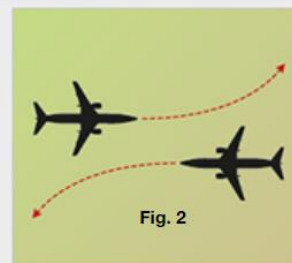


Fig. 2

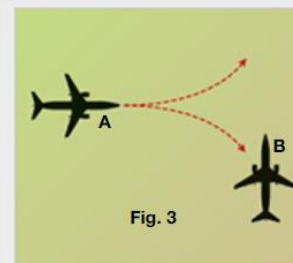


Fig. 3

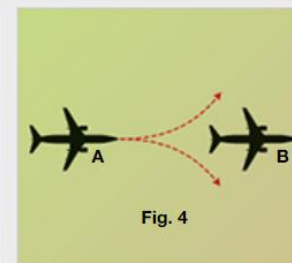


Fig. 4

- 1 If both aircraft are in front of each other, and see each other on their left side, both must turn right.
- 2 If both aircraft are in front of each other, and see each other on their right side, both must turn left.
- 3 If aircraft A is in front of, and to the left of, aircraft B, and aircraft B is in front of, and to the right of aircraft A, then A must turn either left or right to ensure separation with minimum change of direction.
- 4 If aircraft A is following behind aircraft B, then A must turn either left or right to ensure separation with minimum change of direction.

SPEED SEARCH

AUDIO SCRIPT

Some facts about robots ...

- Approximately 30% of robots in the world work on car assembly lines. Around 25% work in electrical or electronics industries.
- About 74% of industrial robots in the world are in the USA, China, Japan, Germany and Korea.
- The Mars robot *Opportunity*, covered over 44 km over the surface of Mars for more than 14 years. The designers planned it to last for only 90 days.
- More than 2.4 million industrial robots are now in use in factories around the world.
- There are about 100 robots for every 10,000 workers in manufacturing industries.

WANTED

Experienced ELECTRONICS ENGINEER at Summit Elektronika

Main Duties: Responsible for a digital audio studio upgrading project. You will supervise a team of senior and junior audio technicians and maintenance staff.

about 22,200 miles (35,700 km) above the Earth and travel at approximately 7000 mph (11,000 km/h). At this speed and altitude, the satellite revolves around the planet once every 24 hours, the same period of time it takes the Earth to make one full rotation. In other words, the satellite appears to be permanently at the same location. You therefore only need to direct your dish at the satellite once and then it picks up the signal without further adjustment. Satellites transmit signals in the frequency range of 10.7–12.75 GHz (in Europe). The low noise block (LNB) on the satellite dish on your roof converts this high-frequency signal into a lower signal in the

Unit 1 Systems

1.1

A dramatic air-sea rescue took place at 11 am, this morning in the Indian Ocean. Two sailors were pulled up from the sea into a helicopter using a powerful winch, in very rough seas and a high wind. The sailors were in a small boat, the *Tiger*, about 77 kilometres from land. Suddenly, their boat struck an object and it sank almost immediately.

The sailors wanted to send an emergency signal by radio, but the boat went down too quickly and the radio sank with the boat. So, the men did the best thing to save their lives - they inflated their life raft and jumped in. They were already wearing their life jackets, of course. But their problem was how to call for help 77 kilometres from land. Fortunately, the boat had a free-floating beacon, which activated when the boat sank to four metres. The beacon detached itself from the boat, floated to the surface of the sea and switched on automatically. Then it transmitted a signal to the rescue satellites.

The rescue helicopter landed nearby. When the flares lit up, the

- A:** I see. And the rescue centre sends out the rescue team?
B: Yes, that's right. First, it locates the beacon; in other words, it finds out its exact position and marks it on a map. Then it sends out the rescue team.
A: And the rescue team carries out the rescue?
B: That's right. The team searches for the survivors, finds them, winches them into the helicopter and then takes them back to the rescue centre or straight to hospital.

Unit 2 Processes

2.1

- 1** For six months, while the Netherlands held the EU presidency, the politicians met in Europe House in Amsterdam. Since the building was for short-term use, the architects, DUS, designed temporary front and side faces using materials that could be recycled at the end of the six months. They used a 3D printer and a special bio-plastic made not from petroleum but from

recycled plastic. The building uses electrical current and a capacitor.

- A:** OK, and what have you come up with?
B: Well, I've decided against optical scanning, because it's too easy to forge a fingerprint. I mean, you could place a photograph of a finger onto the scanning plate instead of an actual finger.
A: Oh dear, yeah, I see what you mean. So, what about the other one, capacitive scanning?
B: I'm looking into that at this very moment. It looks a bit more secure because it measures the actual ridges, not just a picture of ridges.
A: Good. Oh, by the way, what about this new iris-scanning technology? A method of scanning the eye. Have you looked into that yet?
B: Ah, No, not yet. That's a big research area, so I'm planning to have a look at that next week.
A: OK, I'm glad it's going well. I'll catch up with you next week.
B: Cheers.

7.4 optional listening

Unit 7 Reports

7.1 optional listening

7.2

[I = Investigator, O = Official]

- I:** I'm conducting an investigation into the recent security breakdown at the airport. I need to ask you some questions.
O: Fair enough.
I: You were the official on duty at security check-point B between 2 and 4 pm on the 18th of this month, is that correct?
O: Yes, that's right.
I: Good. So, could you tell me exactly what happened when the passenger walked through the metal detector?
O: He walked through and the detector sounded.
I: What did you do?
O: I told him to step back and then I ordered him to walk through again.
I: Mm-hm. Are you sure you instructed him to walk through again?
O: Er, yes, I am. I told him to take his money out of his pockets. I told him to put the money on a tray, and then I ordered him to walk through again.
I: Give me your exact words. What did you say to him? Actual words, please.
O: I said, 'Put your money on the tray. Now walk through again, please.'
I: And then what happened?

Unit 8 Projects

8.1

- 1** This is the News at Ten on Monday, the second of June, 2008. Good evening. The Perdido Spar has been towed to its site in the Gulf of Mexico. The spar, which is expected to be the deepest oil spar in the world, weighs about 45,000 tonnes, equivalent to about 10,000 motor vehicles.

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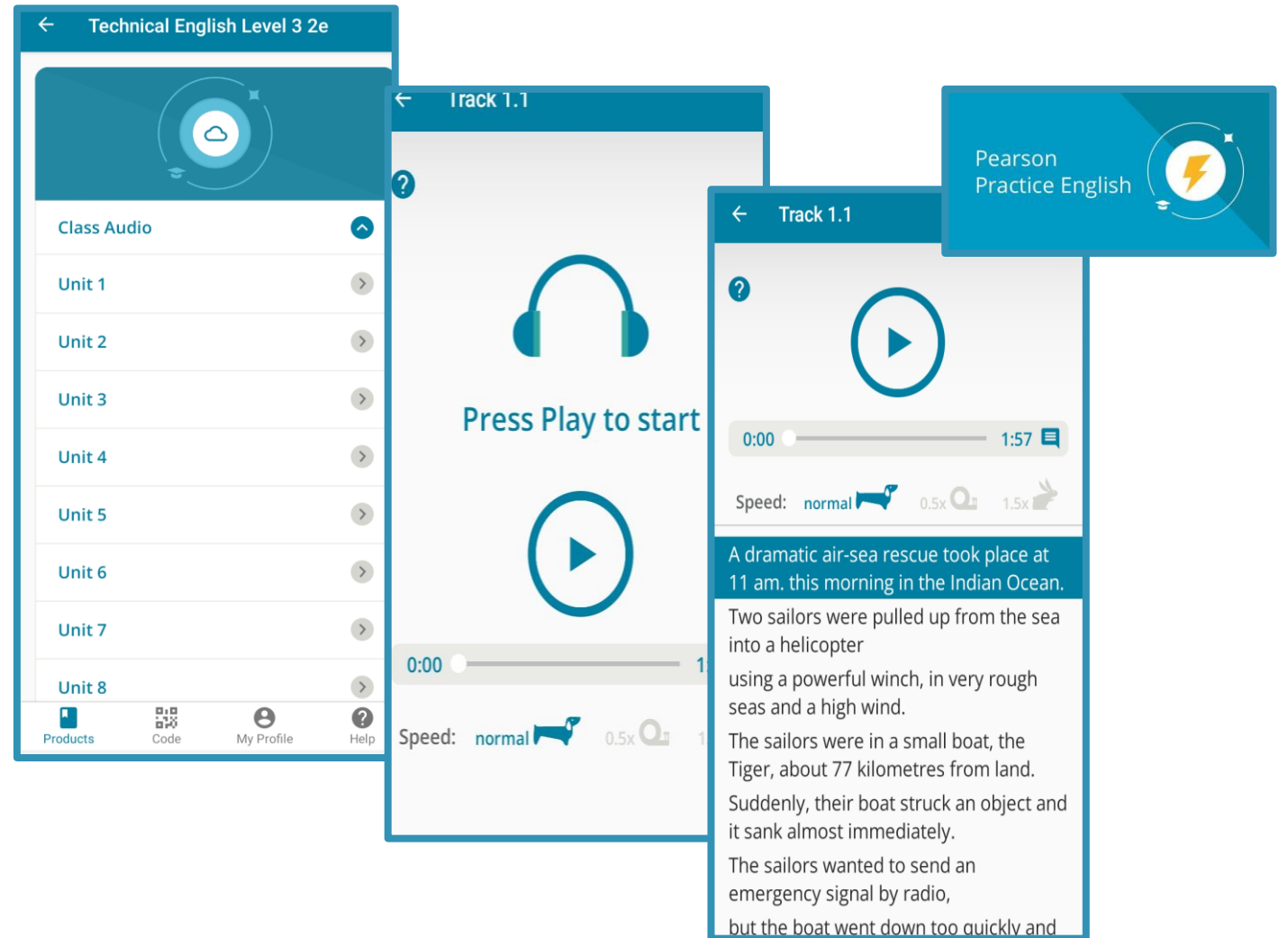
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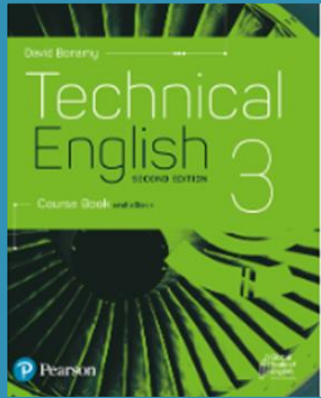
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Cover

IFC

Title Page

Contents

Unit 1 Systems

1.1 Rescue

1 Systems

1 Rescue

START HERE > 1 Work in pairs. Answer the questions about the safety devices in this illustration of an air-sea rescue.

How the survivors were rescued

Which ones:
1 stop you from sinking?
2 tell the rescuers where you are?
3 rescue you from the water?

LISTENING > 2 Listen to this news report and put the six safety devices from 1 in the order the reporter mentions them.
1 2 3 4 5 6

3 Put these statements in the order the events actually happened. Then listen again to check your answers.

A _____ The helicopter winched the sailors out of the life raft.
B _____ The sailors inflated the life raft and jumped in.
C _____ The boat struck an object in the sea.
D _____ The sailors fired two flares into the air.
E _____ The boat sank.
F _____ The beacon sent a signal to the satellite.
G _____ The beacon detached itself from the boat.
H _____ The rescue team saw the flares.

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2 8 (line 22) _____
3 which (line 30) _____
4 itself (line 33) _____
5 there (line 35) _____
6 in which (line 43) _____

kilometres, flares, visible emergency signal, coastguard, beacon, free-floating satellite, automatically, megahertz, wavelength

5 Complete this incident report form.

INCIDENT REPORT FORM	
Name of rescue helicopter pilot: Ricardo Moura	Date of rescue: _____
Name of boat: _____	
Distance of boat from land: _____	
Number of people rescued: _____	
Time of first emergency signal: _____	
Type of emergency beacon: _____	
Time of rescue: _____	
Method of rescue: _____	

SPEAKING > 6 Work in pairs. Take turns to be the rescue pilot and a safety officer. The safety officer interviews the pilot and asks questions based on the form.
Examples: What's your name? Where did the rescue take place?

6 | 7



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1 Systems

1 Rescue

START HERE ▶ 1 Work in pairs. Answer the questions about the safety devices in this illustration of an air sea rescue.

How the rescuers work together:

- A Helicopter
- B Boat
- C Life raft
- D Beacon
- E Rescue team

Which ones:

- 1 stop you from sinking?
- 2 tell the rescuers where you are?
- 3 rescue you from the water?

LISTENING ▶ 2 **▶▶▶** Listen to this news report and put the six safety devices from 1 in the order the reporter mentions them.

1 — 2 — 3 — 4 — 5 — 6 —

3 Put these statements in the order the events actually happened. Then listen again to check your answers.

- A. _____ The helicopter winched the sailors out of the life raft.
- B. _____ The boat struck an object in the sea.
- C. _____ The boat sank.
- D. _____ The sailors fired two flares into the air.
- E. _____ The beacon sent a signal to the satellite.
- F. _____ The beacon detached itself from the boat.
- G. _____ The rescue team saw the flares.
- H. _____

READING ▶▶▶ 4 Read this news article and explain what the words below refer to.

Seventy or more kilometres from land, your boat strikes an unseen object and sinks quickly. You have no time to send a radio message. You jump into your life raft. You have flares in your life raft, but they are only visible from a distance of about 5 km. How do you send an emergency signal to the nearest rescue centre?

This happened to two sailors on 18 July this year. They were sailing in the Indian Ocean when their boat, the *Tiger*, struck a sharp object. The boat quickly sank 77 kilometres from the nearest land. They got into their life raft, but their radio was lost when the boat went down.

At 09.30, the coastguard received a signal from the boat's emergency beacon. The coastguard forwarded it to the rescue centre and by 11.00 (only 90 minutes later) the crew of the helicopter found the two sailors and winched them into the helicopter from the life raft. How was the emergency signal transmitted?

Fortunately, the *Tiger* was fitted with a 406 MHz free-floating beacon, which was linked to the Cospas-Sarsat satellite system. When the boat sank, the beacon automatically detached itself from the yacht and floated to the surface. There, it switched on automatically and transmitted an emergency signal on the 406 MHz wavelength to the satellite. The satellite then forwarded the signal to the coastguard.

The free-floating beacon and the Cospas-Sarsat satellite system can increase the chances of saving lives in any air-sea rescue, in which the most important thing is to locate the survivors quickly.

- 1 They (line 17) _____ the two sailors _____
- 2 it (line 27) _____
- 3 which (line 30) _____
- 4 itself (line 33) _____
- 5 there (line 25) _____
- 6 in which (line 45) _____

kilometres flares visible emergency signal coastguard beacon free-floating satellite automatically megahertz wavelength ▶▶▶

5 Complete this incident report form.

INCIDENT REPORT FORM	
Name of rescue helicopter pilot:	Ricardo Mateos
Date of rescue:	
Name of boat:	
Distance of boat from land:	
Number of people rescued:	
Time of first emergency signal:	
Type of emergency beacon:	
Time of rescue:	
Method of rescue:	

SPEAKING ▶ 6 Work in pairs. Take turns to be the rescue pilot and a safety officer. The safety officer interviews the pilot and asks questions based on the form.

Examples: *What's your name? When did the rescue take place?*



LISTENING »

2 **1.1** Listen to this news report and put the six safety devices from 1 in the order the reporter mentions them.

1 ___ 2 ___ 3 ___ 4 ___ 5 ___ 6 ___

3 Put these statements in the order the events actually happened. Then listen again to check your answers.

- A ___ The helicopter winched the sailors out of the life raft.
- B ___ The sailors inflated the life raft and jumped in.
- C 1 The boat struck an object in the sea.
- D ___ The sailors fired two flares into the air.
- E ___ The boat sank.
- F ___ The beacon sent a signal to the satellite.
- G ___ The beacon detached itself from the boat.



READING » **4** Read this news article and explain what the words below refer to.

Seventy or more kilometres from land, your boat strikes an unseen object and sinks quickly. You have no time to send a radio message.
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The free-floating beacon and
Cospas-Sarsat satellite system

Highlight [Yellow] [Teal] [Pink]

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Create note

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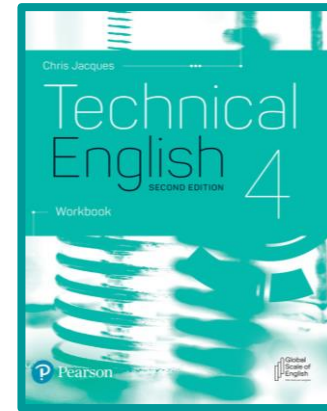
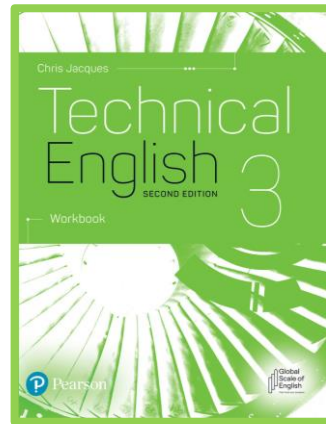
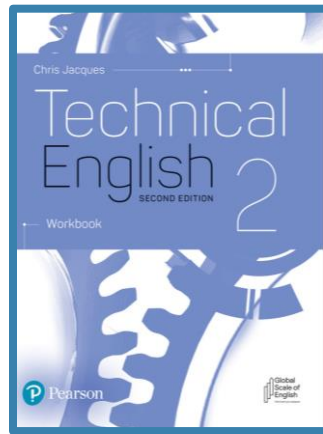
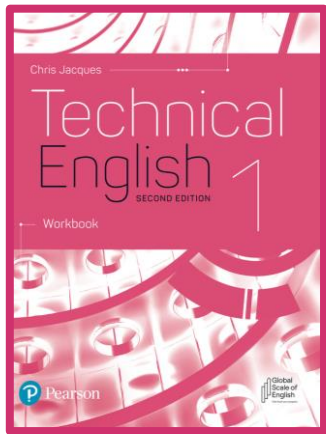
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Page 7

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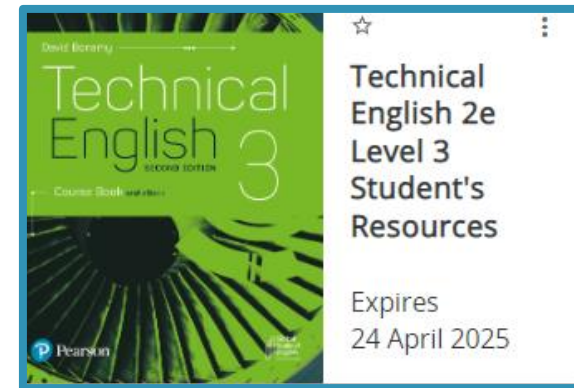
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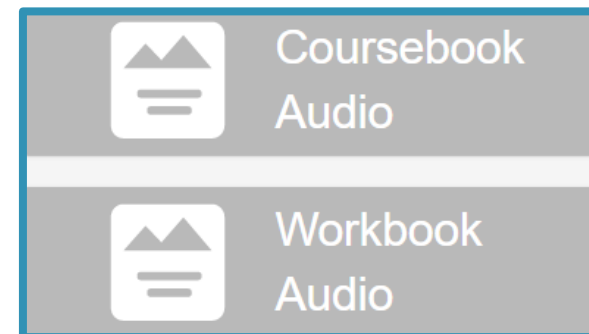
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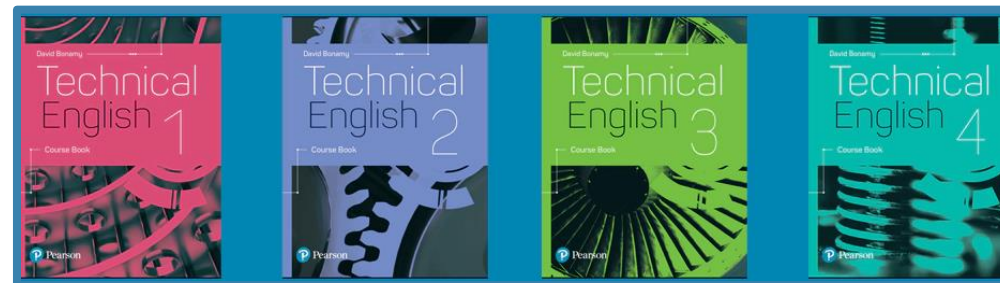


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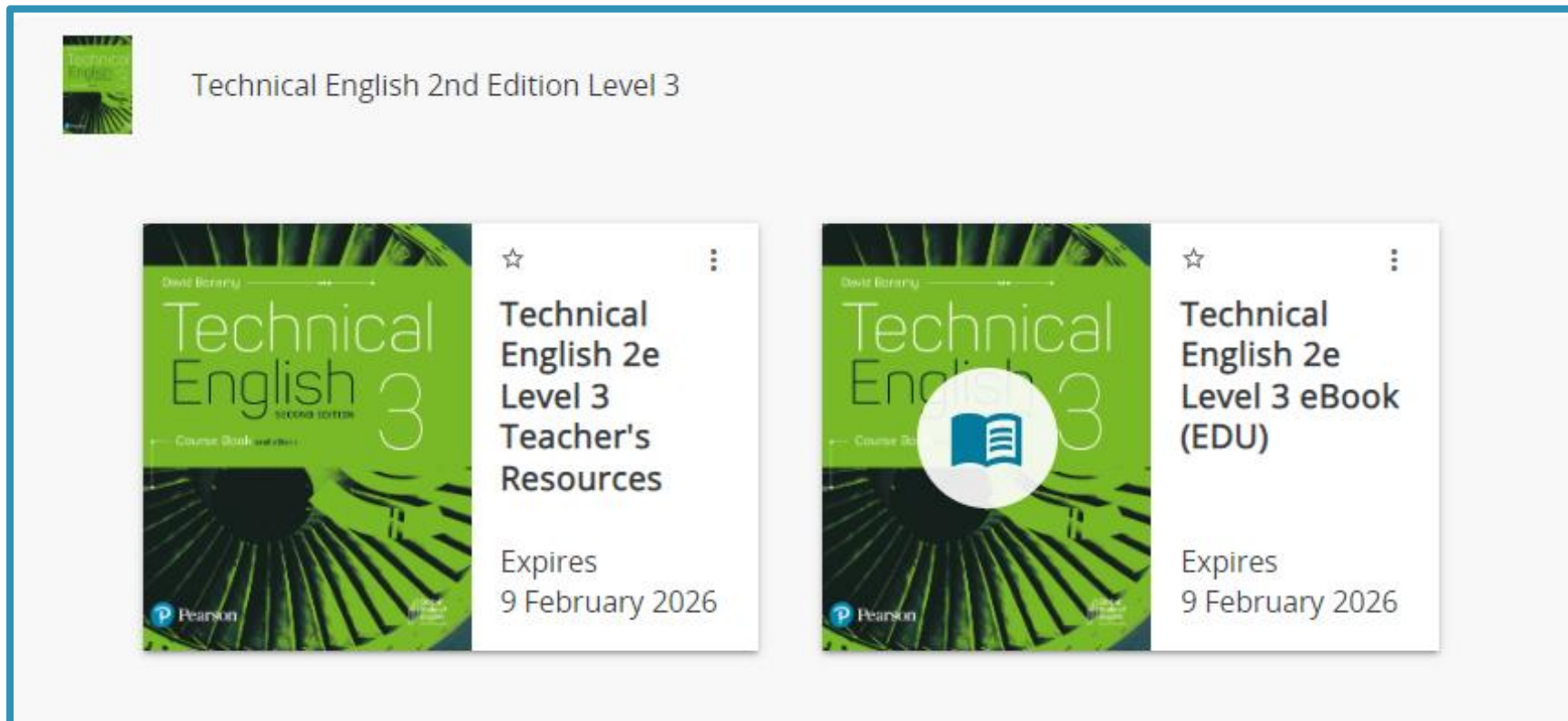


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Unit 1

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Contents

1 Rescue

Objectives

In this section, students will ...

- learn vocabulary for safety equipment and

Briefing

This unit looks at **systems**, in particular the components of **search-and-rescue (SAR)** systems: satellites, emergency beacons, self-activating devices, automatic and manual release mechanisms.

1 Rescue

Section 1 deals with the events surrounding a search-and-rescue operation (based on a real-life incident) and the equipment and technology used in **locating** (discovering the exact position of) the survivors of a boat that has sunk in the open sea. The reading text on page 5 gives the facts, the main point being that the only way the survivors can alert

3 Operation

Objectives

In this section, students will ...

- answer questions about a diagram of a free-floating emergency beacon
- match synonyms to do with

2022, there are 45 countries that use a satellite system. The **GEOSAR** (geostationary) system uses two satellites which are at a higher altitude and remain fixed relative to the Earth. The **LEOSAR** (low-altitude orbiting) satellites, which orbit the North and South Poles, provide wider coverage because they orbit the Earth because of its low altitude. Each satellite provides a wider coverage because they provide locations. Each satellite has weaknesses, which is why they are working together to provide a more reliable system of signals. More detail

Teacher's notes

1 Rescue

Warmer

As a warmer, ask students to keep their books closed and tell them to imagine that they are in a boat in the middle of the ocean. There has been an accident and the boat is sinking. Ask them to decide amongst themselves what equipment they need to have in the boat in order to get rescued.

Start here

- Ask students to open their Course Book and focus their attention on the diagram and the photo on the right. Tell them to compare the diagram about the rescue with their ideas in the warmer, but do not go into too much detail at this stage, as they will listen to a recording about the rescue in 2. Go through the labels in the diagram with the class, making sure students pronounce the words correctly, particularly *winch*. Pre-teach some of

Listening

2 1.1

Explain to students that they are going to listen to a news report about an air-sea rescue. They will need to put the devices from the illustration into the order that the reporter mentions them. Play the recording. Allow students to compare answers, then go through the answers with the class.

1 B 2 F 3 D 4 C 5 E 6 A


1.1

A dramatic air-sea rescue took place at 11 am this morning in the Indian Ocean. Two sailors were pulled up from the sea into a helicopter using a powerful winch, in very rough seas and a high wind.

The sailors were in a small boat, the *Tiger*, about 77 kilometres from land. Suddenly, their boat struck an object and it sank almost immediately.

The sailors wanted to send an emergency signal by radio, but the boat went down too quickly and the radio sank

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


Exit Test

Placement Tests





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- ☆  Exit Test Answer Key (doc)
- ☆  Exit Test Answer Key (pdf)



Worksheets (25)



Download all Worksheets

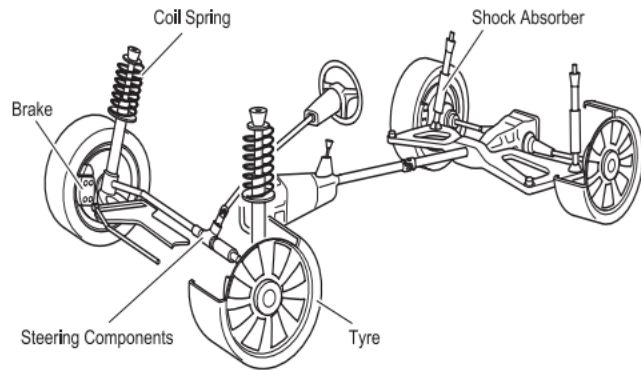
Automotive Industries Unit 1

Automotive Industries Unit 1 Answer Key

Technical English 3
SECOND EDITION

Automotive Unit 1

Read this article about suspension systems. What sort of suspension would you expect a racing car to have?



The suspension system connects a vehicle to its wheels, and is designed to provide steering stability as well as a comfortable ride. To do this it must have the ability to deform elastically, in other words, to change shape when a force is applied, and then return to its original shape when the force is removed.

Technical English 3
SECOND EDITION

Automotive Unit 1

Word List

Write the meanings of these words and phrases in your own language.

NOUNS

- acceleration _____
- braking _____
- cornering _____
- deformation _____
- grip _____
- handling _____
- helix _____
- ride _____
- stability _____

VERBS

- deform _____
- dip _____

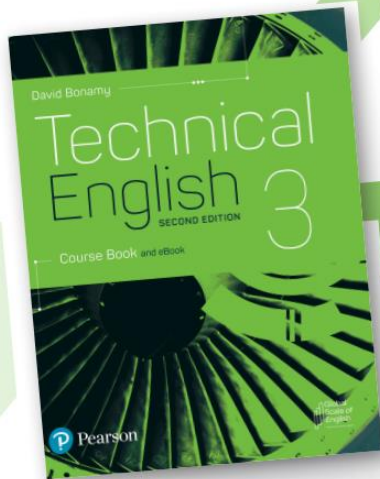


Syllabus Mapping (2)



GSE MAPPING BOOKLET

Alignment with the Global Scale of English and the Common European Framework of Reference



Unit 7 Reports

Lexis / Technology

7.1: Reporting verbs + security

7.2: Electrical

7.3: Electrical, electronics

Grammar / Discourse


7.1: Reported speech

7.2: Past continuous

7.3: Discourse markers

SKILL	GSE DESCRIPTOR	GSE	CEFR	PAGE(S)
Listening	Can extract the key details from discussions in meetings conducted in clear, standard speech. (P)	57	B1+ (51-58)	53
	Can extract the key details from a presentation if delivered slowly and clearly. (P)	47	B1 (43-50)	56
Speaking	Can carry out a prepared interview, checking and confirming information as necessary. (CA)	57	B1+ (51-58)	53
	Can suggest possible solutions to a problem using simple language. (P)	47	B1 (43-50)	54
	Can describe the personal significance of events and experiences in detail. (CA)	63	B2 (59-66)	55
	Can briefly give reasons and explanations for opinions, plans and actions. (C)	51	B1+ (51-58)	56
Reading	Can give a simple presentation on a work-related topic. (P)	51	B1+ (51-58)	57
	Can follow chronological sequence in a formal structured text. (P)	52	B1+ (51-58)	54, 55
	Can infer meaning in a simple academic text, in order to answer specific questions. (P)	54	B1+ (51-58)	54, 55
	Can understand details of written product information (e.g. specifications). (P)	58	B1+ (51-58)	54, 55
	Can scan several short, simple texts on the same topic to find specific information. (P)	48	B1 (43-50)	56
	Can understand the main information in technical work-related documents. (P)	53	B1+ (51-58)	57
Writing	Can prepare a simple outline to organise ideas and information. (P)	48	B1 (43-50)	57

☆ Audio (115)



☆ Class Audio

☆ Workbook Audio

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Teacher's eBook

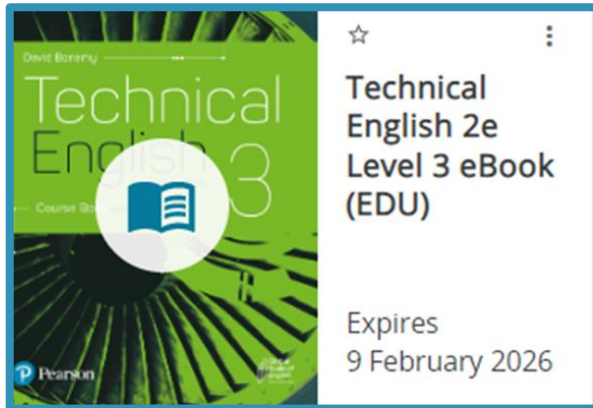




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Unit 1 Systems

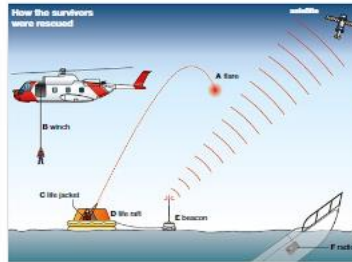
1.1 Rescue



1 Systems

1 Rescue

START HERE ▶ 1 Work in pairs. Answer the questions about the safety devices in this illustration of an air-sea rescue.



Which ones:

- 1 stop you from sinking?
- 2 tell the rescuers where you are?
- 3 rescue you from the water?

LISTENING ▶ 2 **1.1** Listen to this news report and put the six safety devices from 1 in the order the reporter mentions them.
1 ___ 2 ___ 3 ___ 4 ___ 5 ___ 6 ___

3 Put these statements in the order the events actually happened. Then listen again to check your answers.

- A ___ The helicopter winched the sailors out of the life raft.
- B ___ The sailors inflated the life raft and jumped in.
- C 1 ___ The boat struck an object in the sea.
- D ___ The sailors fired two flares into the air.
- E ___ The boat sank.
- F ___ The beacon sent a signal to the satellite.
- G ___ The beacon detached itself from the boat.
- H ___ The rescue team saw the flares.



READING ▶ 4 Read this news article and explain what the words below refer to.

Seventy or more kilometres from land, your boat strikes an unseen object and sinks quickly. You have no time to send a radio message. You jump into your life raft. You have flares in your life raft, but they are only visible from a distance of about 5 km. How do you send an emergency signal to the nearest rescue centre?

This happened to two sailors on 18 July this year. They were sailing in the Indian Ocean when their boat, the *Tiger*, struck a sharp object. The boat quickly sank 77 kilometres from the nearest land. They got into their life raft, but their radio was lost when the boat went down.

At 09:30, the coastguard received a signal from the boat's emergency beacon. The coastguard forwarded it to the rescue centre and by 11:00 (only 90 minutes later) the crew of the helicopter found the two sailors and winched them into the helicopter from the life raft. How was the emergency signal transmitted?

Fortunately, the *Tiger* was fitted with a 406 MHz free-floating beacon, which was linked to the Cospas-Sarsat satellite system. When the boat sank, the beacon automatically detached itself from the yacht and floated to the surface. There, it switched on automatically and transmitted an emergency signal on the 406 MHz wavelength to the satellite. The satellite then forwarded the signal to the coastguard.

The free-floating beacon and the Cospas-Sarsat satellite system can increase the chances of saving lives in any air-sea rescue, in which the most important thing is to locate the survivors quickly.

- 1 They (line 12) _____ the two sailors.
- 2 It (line 22) _____.
- 3 which (line 30) _____.
- 4 itself (line 33) _____.
- 5 There (line 25) _____.
- 6 in which (line 43) _____.

kilometres flares visible emergency signal coastguard beacon free floating satellite automatically megahertz wavelength

5 Complete this incident report form.

INCIDENT REPORT FORM	
Name of rescue helicopter pilot: Ricardo Mourca	Date of rescue:
Name of boat:	
Distance of boat from land:	
Number of people rescued:	
Time of first emergency signal:	
Type of emergency beacon:	
Time of rescue:	
Method of rescue:	

SPEAKING ▶ 6 Work in pairs. Take turns to be the rescue pilot and a safety officer. The safety officer interviews the pilot and asks questions based on the form.

Examples: *What's your name? When did the rescue take place?*



6 | 7





Display settings



Text size



Page view

Single page

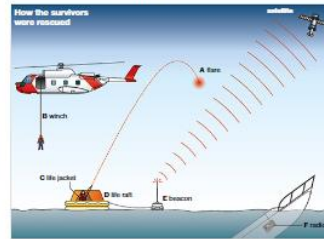
Double page



1 Systems

1 Rescue

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Examples: What's your name? When did the rescue take place?





LISTENING »

2  1.1 Listen to this news report and put the six safety devices from 1 in the order the reporter mentions them.

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Highlight    

New note 

Create note





Highlight   

Note

našťastie

Save

Notebook

Chapters  Colors   

Page 7

Page 7

Fortunately

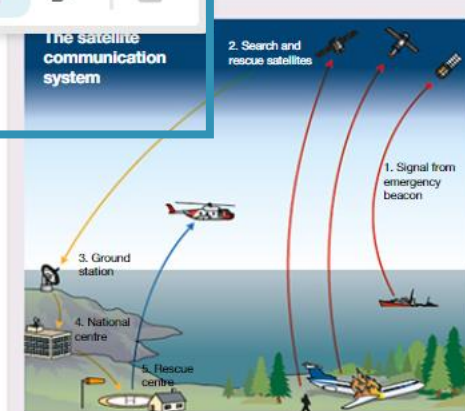
našťastie

2 Transmission

START HERE »

1 Complete this description of how a satellite communication system works, using the correct form of the verbs in the box.

receive convert detach activate carry out transmit locate



If a plane crashes, or a ship sinks, the survivors (1) _____ their personal emergency beacons manually. In addition, an automatic beacon (2) _____ itself from the plane or ship and switches on automatically. The beacon then (3) _____ a signal to one or more satellites. The satellites (4) _____ the beacon's transmission and send the beacon's signal to their ground station. The ground station then processes the satellite signals (that is, it (5) _____ the signals into useful data) and passes on the data about the beacon to a national centre. The national centre forwards this data to the rescue centre nearest to the crashed plane or sinking ship. The rescue centre then (6) _____ the beacon and sends out a rescue team, which (7) _____ the rescue.

✓ LISTENING » 2 1.3 Listen to this discussion and check your answers to 1.

✓ READING » 3 Part of this text is missing. Write the letters of phrases A–G below in the correct spaces. Use the illustration in 1 to help you.

Toolkit

Color

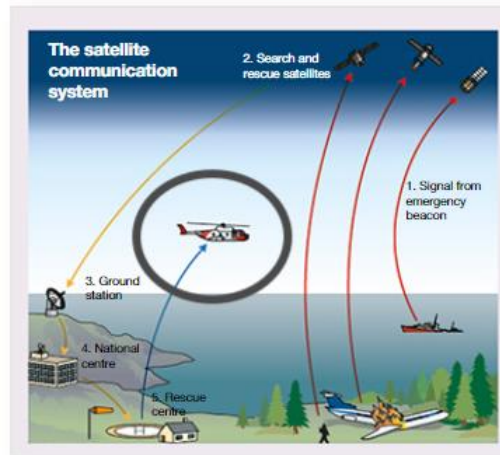
Line Weight

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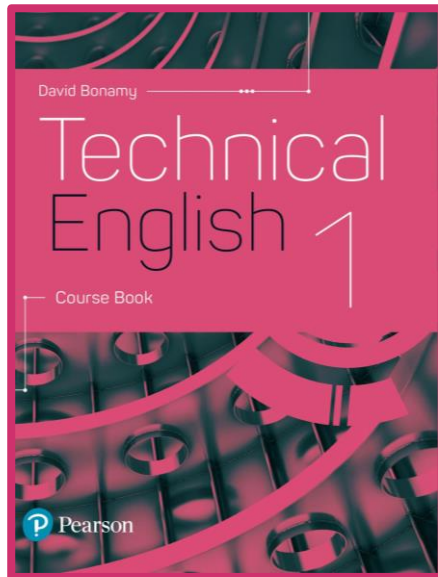
Read carefully.

- LISTENING »** 2 1.3 Listen to this discussion and check your answers to 1.
- READING »** 3 Part of this text is missing. Write the letters of phrases A–G below in the correct spaces. Use the illustration in 1 to help you.

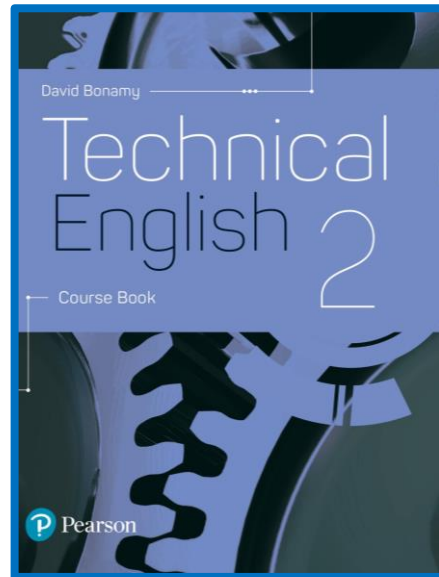
The Cospas-Sarsat system is an international search-and-rescue LEOSAR satellite



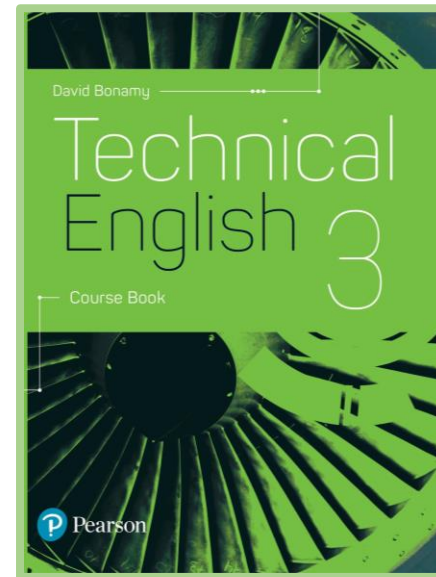
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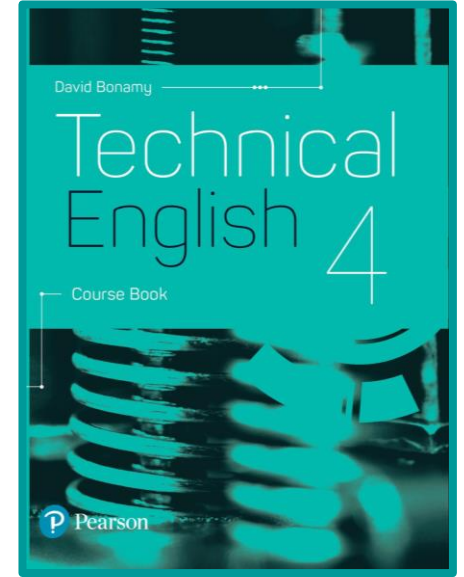
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GSE 20-32**



**CEFR A2
GSE 30-44**



**CEFR B1/B2
GSE 43-61**



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GSE 60-80**

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British English

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eBook

CB & WB audio

PPE App (CB & WB audio)

Workbook with key

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eBook

Teacher's resources

Teacher's Book

Assessment Package

Worksheets

CB&WB audio

Demo code

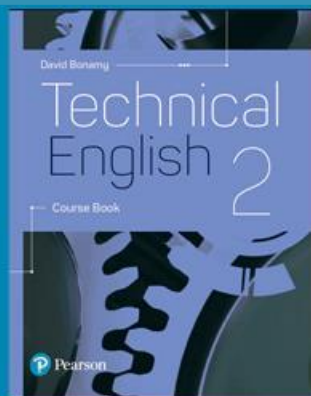
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