Pearson Edexcel Level 1/Level 2 GCSE (9–1)

English Language

Paper 2: Non-fiction and Transactional Writing
Section A: Reading Texts Insert

Friday 3 November 2017 – Morning
Time: 2 hours

Paper Reference
1EN0/02

Do not return the insert with the question paper.

Advice

- Read the texts before answering the questions in Section A of the question paper.

Turn over ▶

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Read the text below and answer Questions 1–3 on the question paper.

TEXT 1

Extract from 'Return to Earth' by Edwin 'Buzz' Aldrin and Wayne Warga (1973).

This is an edited extract from an autobiography written by the American astronaut 'Buzz' Aldrin. Aldrin is writing about the return to earth of Apollo 11, the first spacecraft to land humans on the Moon.

We floated down through a bank of clouds as big and lush as the ocean they covered. The change was impressive. I had become so accustomed to seeing the starkness of space, where there is no haze and where definitions are quite sharp, that the sensation of looking out on a hazy early morning on earth was a welcome change. I could see the ocean below, and as I looked at it, I sniffed to smell it. Not yet.

The sensation caused by the change of scenery pales beside the sensation of getting used to the fact of weight. For a number of minutes, movement is an effort. Arms, which had floated before, now hung heavily and had to be willed to movement. Legs, which are about as necessary to space travel as an appendix is to a body, stirred to activity by threatening not to function at all.

We landed with all the grace of an old freight elevator. Air Boss* had announced to us that the wave height was between three and four feet, but it looked more like thirteen or fourteen. And it felt like it too. Our chutes, tilting in the wind, brought us in at one angle, and the moon, governor of the tides, sent a wave our way from an opposing angle. With an enormous thwack, as jarring as it was noisy, we landed. Before the impact, my hand rested on circuit breakers which, when pushed in, would enable Mike to jettison** our chutes. After impact, my hand was jammed painfully down beside me. All of us grunted in distress; I grabbed the circuit breakers and Mike jettisoned the chutes.

The *Apollo* spacecraft is a marvel of engineering. It is totally life-supporting, a miniplanet containing all facilities necessary for maintaining life. It also floats, whether right side up or upside down. There is no way to determine which way you'll end up after landing, especially in a good wind and a delayed chute jettison.

It brings a smile now, but at the time, it wasn't quite so amusing. There we were, officially taking our position in the history books of mankind, floating upside down in the Pacific Ocean. It was July 24, 1969. The water was dark green and unfriendly, but its mist seeping in smelled good.

We bobbed around for seven minutes, the amount of time it takes the float-bag motors to pump air into the float-bags – three little balloons – which would turn us upright.

"Air Boss, *Apollo 11*. Everyone okay inside. Our checklist is complete. Awaiting swimmers," Neil radioed.

Air Boss came right on and told us three swimmers were already in the water, and our flotation collar would be attached in less than two minutes.

It was over. No exclamations, no slaps on the back. No handshakes. All that would come later, at least the handshakes. We sat in silence, three men alone together with their private thoughts.

*Air Boss** – nickname given to the Naval Air Force
*jettison*** – release or discard

Read the text below and answer Questions 4–7 on the question paper.

TEXT 2

Extract from 'space:uk' (2016) from the UK Space Agency.

This edited extract is taken from Issue 46 of a magazine offering the latest space sector news. This issue reports on the return to earth of British astronaut Tim Peake.

British European Space Agency (ESA) astronaut Tim Peake's Principia expedition to the International Space Station (ISS) came to an end on 18 June, with the landing of his spacecraft in Kazakhstan.

"Incredible!" said Tim Peake, describing his descent to Earth in a spacecraft after 186 days on the ISS. Some astronauts have likened the experience to going over Niagara Falls in a flaming barrel. Peake, however, described it as: "The best ride I've been on, ever."

Down to Earth

Peake's return flight to Earth was one of the most dangerous parts of his mission. Strapped in next to Russian commander Yuri Malenchenko and NASA astronaut Tim Kopra, the crew had undocked from the ISS some three and a half hours earlier. After moving slowly from the ISS, they fired thrusters to take them out of orbit on a trajectory* towards Earth.

The spacecraft entered the atmosphere at some 28,000 km/h. The craft's heat shield is tilted towards the direction of re-entry so that it can handle temperatures of up to 1600°C generated by friction as it pushes through atmospheric gases. This is a bumpy and uncomfortable ride for the astronauts – who are forced back into their seats by g-forces of four to five times Earth's gravity.

Ten kilometres above the ground, the spacecraft has already slowed considerably and parachutes open for the final descent to Earth. Just before it hits the Earth, retrorockets fire to reduce the impact speed to 5 km/h. This is still quite a jolt for the astronauts on board, who have spent six months in a weightless environment.

After being helped out of the spacecraft, the British astronaut's joy at being back on Earth was clear. "The smells of Earth are so strong," he said. "It's wonderful to be back in the fresh air."

Dripping with sweat in his spacesuit, he told waiting reporters he was looking forward to seeing his family and was hoping for "a pizza and cold beer". He was, though, going to miss the view of the Earth from space and couldn't wait to go back.

After being checked out by doctors, Peake boarded a flight to the European Astronaut Centre at Cologne in Germany where he was re-united with his family.

Although Peake's time in space is over (for now at least), this is by no means the end of his mission. The astronaut will spend the coming months taking part in debriefs about the flight. He will also undergo medical tests and rehabilitation training to see how his body has been affected by his time in space.

It can take astronauts up to a year to regain their full fitness after six months in microgravity. Studies into the effects of spaceflight are crucial if humans are ever to venture further from Earth on long duration missions to destinations such as Mars.

Meet the media

Three days after landing, a refreshed-looking Peake appeared in front of a packed press conference in Cologne to be greeted by cheers from friends, colleagues and the media.

"I would do it again in a heartbeat," Peake said of his mission. 40

*trajectory** – route

Sources:

Text 1: *Return to Earth,* Buzz Aldrin and Wayne Warga, 1973; Open Road Media. (Kindle Edition).

Text 2: *space:uk*, Issue 46 2016; UK Space Agency www.gov.uk/government/organisations/uk-space-agency, Crown Copyright, URN UKSA/15/9.

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