Military English exam – Reading

Eyes In The Skies

When the science fiction author Arthur C. Clarke wrote an article about satellite communication in 1945, people treated his ideas as pure fantasy. It was a time when the moon and a few small asteroids were Earth's only satellites – and no one knew about the asteroids. Artificial satellites were the stuff of Clarke's imagination. But in the years to come science was quick to catch up. Today, satellites are an integral part of our lives. Communications, Earth observation and mapping all depend on these strange-looking metal machines in the sky.

The first satellite, Sputnik-1, was launched by the Soviet Union in 1957, famously starting the Space Race. In 1964, the USA launched Syncom-3, the first geostationary satellite. Geostationary satellites orbit in a band of space 35,788 kilometres above the earth's surface – an area known as the Clarke's Belt. They move together with the Earth, always remaining in the same position overhead. One of them can cover about 42% of the Earth's surface, so three correctly placed satellites are able to "see" the whole globe. Today they are used for communications and television.

Millions of people are benefiting from the use of satellites. In Bangladesh, where corruption is a serious problem, the country's Institute of Engineering has used satellite images to identify regions where new roads are most necessary. It turned out to be much better than asking corrupt politicians for their opinions. In the Brazilian Amazon, civil servants used satellite technology to stop the illegal cutting of trees. In the first two years of their programme, they reduced such practices by 30%. In the US, the number of fires fell by 53%, all thanks to satellite technology.

Satellite technology can also assist voluntary organizations. One of such agencies, *Medicins Sans Frontiers* (*MSF*), was once trying to find out how many Somali refugees there were in Kenya. When the government turned out uncooperative, they contacted a British-based charity – *Aid for Aid*. *Aid for Aid* gave MSF satellite data for free. Its help turned out to be priceless in Kenya. "Unable to get any official data, we turned to satellite images. We could see the map of the refugee camp with its buildings. This helped us guess the approximate number of people in need," says *MSF*'s project manager.

Satellites can be helpful, but at the end of their lives they turn into trash. There are about 2, 800 functional objects in space. Unfortunately, there's also rubbish – parts of rockets, fragments of crashed satellites and the like. The US Military Space Command is the only organisation monitoring these potentially devastating objects. So far it has identified 6, 124 pieces of space litter including Soviet nuclear reactors. As to the number of items smaller than 10 centimetres, it is anyone's guess, but it probably runs into hundreds of thousands. And just because they are small, it doesn't mean they are less dangerous. Because of its high speed, an 80-gram object in a collision with a satellite would create an explosion equivalent to half a kilogram of TNT (trinitrotoluene). That would be enough to destroy a half-tonne satellite.

But can a piece of orbital rubbish hit a functional satellite? What is the probability of such a collision? "There is a small risk to operational satellites," agrees Richard Crowther, a Space Command employee. "But if we send out a message about the exact position of a threatening object, satellites can be guided away from it. It's the best solution. No objects get hit and satellites' work stays undisturbed." And that's exactly what Space Command does. It warns the ground staff if any worrying object gets too close to a satellite, which gives controllers enough time to avoid the approaching threat.

There is no doubt that satellites are here to stay. They have proved to be a reliable way of collecting and communicating information. Every nation has its own positions in the geostationary band. Theoretically, each controller should remove their satellites from the Clarke's Belt towards the end of their functional life. Why is it done so rarely then? Well, for one thing, legal regulations don't apply to all countries. For another, fines for leaving junk in space aren't high enough. Finally, limited financial resources allow operators to put satellites in orbit and service them, but not to get them back on Earth. Even so, Crowther is optimistic about the future. "Scientists already understand that space is not a dumping ground. If politicians understand this, too, and create the right law for operators, we'll all manage to get rid of the existing space junk."

Hopefully, satellites won't get stuck in the bureaucratic black hole.

1. In his article Clarke ...

A. said the Earth had a couple of satellites
B. wrote about artificial satellites
C. described the Earth's natural satellites

2. Two geostationary satellites ...

A. are enough to view the whole planet
B. circulate the planet to view the whole of it
C. need one more satellite to view the whole planet

3. Satellite technology helped ...

A. find places where roads were most needed
B. eliminate illegal cutting of trees in Brazil
C. reduce fires by less than a half in the US

4. MSF got satellite pictures from ...

A. the Kenyan government
B. a non-profit institution
C. a commercial organization

5. Objects lighter than 10 grams can be destructive because ...

A. they move very fast
B. they often explode
C. they are radioactive

6. Space Command ...

A. changes the direction of satellites
B. destroys objects that are a threat
C. informs the ground staff of a danger

7. Operators ...

A. are not punished for leaving satellites behind
B. cannot afford to remove satellites from space
C. are all legally forced to clean up space junk

History Repeats Itself

Christmas and New Year, 2006-7, was one of the more violent ... **(0)** ... by the 1st Battalion, The Royal Green Jackets (RGJ). The unit's battle-group had begun a dangerously eventful tour in southern Iraq the previous October. By the start of February, in true British Army tradition, the soldiers of 1 RGJ were parading at Basra Palace to the sound of bugles and the click of cameras. While parading, they were also listening carefully to the whistle of incoming fire. To an observer this may have seemed strange, but the occasion was very important ... **(8)** ... . It was a day on which the regiment voluntarily joined others to form a new, larger organization.

There was also a sense of history repeating itself. The RGJ's 1st and 2nd Battalions evolved into the 2nd and 4th Battalions of The Rifles while they were fighting for the security of southern Iraq. A similar thing happened in 1966 as the RGJ had been formed at a time when all three battalions were ... **(9)** ... in Borneo.

The run-up to the February 1 parade is described by Maj Alex Baring of A Company in a series of emotional "Letters from the Front" to his regimental journal. Some of them appear ... **(10)** ... . In December he had written of the terrible atmosphere in such hotspots as Al Qibla, where a smart enemy used mobile phones and flocks of pigeons ... **(11)** ... .

It was "one of the most violent Christmases any of us ever experienced," he wrote 2 hours before midnight on New Year's Eve . RGJ soldiers had spent the early hours of Christmas morning supporting an operation that was run by a Basra City battle group. During the operation they managed to destroy the old headquarters building of the corrupt and murderous Special Crimes Unit.

" The insurgents didn't like that at all and have been trying hard to hit back at us," he recorded. " The day before yesterday they killed a sergeant from the other regiment ... **(12)** ...; a loud explosion that rang across the city and shocked us all." The opportunity for the British-led forces ... **(13)** ... came later that night, when a building was targeted and a "small" demolition charge was placed.

... **A** ... ***(Example)****that had ever been experienced*
... **B** ... with a roadside bomb
... **C** ... to strike back
... **D** ... in a special edition
... **E** ... to flag up the positions of patrols
... **F** ... in the regiment's 41-year history
... **G** ... to reach a ceasefire agreement
... **H** ... on combat operations

0	8	9	10	11	12	13
A						

TASK THREE

It could be a scene from a bygone age: a pony and trap makes its way over Tower Bridge. But this pony and trap (small horse and carriage), driven by Dan Tipple, is surrounded by cars, their drivers slowing down for a look. The pony transports Dan all over London, including into the centre, where Mr Tipple will drop his daughter off for one of her shopping trips.

"I sometimes pick up my daughter from school, which goes down very well with her friends," explains Tipple, who keeps his horse at Mudchute City Farm in east London. "From a safety point of view you have to avoid going through tunnels like Rotherhithe or dual carriageways, but it's OK to use roads and drivers are tolerant. If I could, I would keep my car in the garage and use my pony and trap all the time. Apart from the environmental benefits, it brings freedom and the journey is dictated by the pony. I also collect shopping from the supermarket the same way."

Encouraged by rising fuel costs and concerns for the environment, growing numbers of people are deserting their cars. And some have found a creative, environmentally friendly mode of transport: horses are providing the means to travel into cities, drop children at school, do the shopping and even commute. In some cases, it's quicker to do these trips on horseback.

Theresa Salmon uses her horse to travel around Newham, east London. She saddles up to go to the supermarket or visit the cash machine. She says: "If I take the car to the supermarket it takes longer. I have the option of going through the park, so I manage to avoid the main road. I also collect my seven-year-old daughter from school."

Using horses for regular trips is something we should be seeing more of, Salmon believes. "Plenty more people could use horses in cities for all sorts of different reasons if they had somewhere to keep them. The Olympics in east London means more money will come to London. As well as sports facilities, this could be used for improving horse-riding routes. Cycle lanes could be adapted to be multi-use so that horses could use the same routes as pedestrians and cyclists. Unfortunately, it's just wishful thinking. Many people think only of using cars. It's as if horses have been forgotten about and it's a shame, as they have been a feature of London life for centuries."

Even in the countryside, where keeping horses might be less of a problem, horse travel has died out. But there are those who are rediscovering the joys of travelling on four legs. Sarah Lindley is a personal assistant to a company director in Okehampton, Devon, and recently started travelling to work by horse.

Motivated by rising fuel costs, she explains: "I decided that with the increase in petrol prices I needed to do something, and as I already owned a horse I decided that I could travel to work and get some exercise for myself and the horse at the same time. However, I am fortunate in that where I work has a field where I can leave my horse. I have a colleague who also commutes to work by horse."

So next time you're filling your car with petrol, give a thought to alternative ways of getting around. You may find a whole new way of life.

0 (Example) Car drivers are interested to see the horse. (...T..)

14. Dan Tipple keeps his horse in a small village outside of London. (.....)
15. Dan uses a horse when doing shopping. (.....)
16. Theresa Salmon is able to keep off busy roads. (.....)
17. The Olympics means money will be spent on roads for horses. (.....)
18. Many Londoners want horses to return to the city. (.....)
19. Sarah Lindley has been using her horse to go to work for a short time. (.....)
20. Sarah Lindley bought a horse to commute to work. (.....)