

NB: This is not a word for word transcript

Rob: Hello and welcome to 6 Minute English. I'm Rob and joining me in the studio today is Jennifer. Welcome, Jennifer!

Jennifer: Hi there. Now Rob, I believe our subject for discussion this week is a load of rubbish?!

Rob: I wouldn't put it exactly like that. We are talking about rubbish – or to use another word – **junk** – and hearing some language about a subject that is out of this world – space junk.

Jennifer: Yes, here on planet Earth we don't like seeing rubbish or litter on our streets but in space the problem is far more serious and it could even be catastrophic – so it could lead to a serious disaster.

Rob: Well, we'll hear more about that in a moment and also find out how scientists are going to clear up this **mess**. But, before that, I think we should blast off with a space-related question. Now, did you know, the Russian satellite, Sputnik, was the first man-made object to be blasted into space? Do you know in which year it was launched?

- a) 1957
- b) 1960
- c) 1967

Jennifer: I think it was in the sixties perhaps so I'm going to say b) 1960.

Rob: Well, we will find out if you are right at the end of the programme. So, we've mentioned that junk – or **debris** – floating around in space is a big problem. It can take a long time to tidy up your house so imagine the challenge that lies ahead in tidying up the great mess in outer space. That's something that's been discussed at a recent conference on space debris in Germany.

Jennifer: Well, tidying up space is not something I would like to do! But how did all this rubbish end up floating about up there in the first place?

Rob: A good question. For the past 50 years, man has been sending objects like rockets and satellites into orbit. In fact, even now around 70 satellites are sent into space every year. But when they are no longer needed they are just left up there and not **disposed of** – or put away somewhere where they won't cause harm. They were never designed to be brought back down to Earth.

Jennifer: These old fragments – or bits of technology continue to circle the Earth and become a threat to spacecraft which are operating up there. In 2009, for example, two satellites accidentally hit each other – or collided - causing them to break into small pieces.

Rob: That's added to the millions of small pieces of junk that are just floating around that might never be **recovered** – in other words collected and brought back down to Earth. Let's hear more about this Professor Richard Crowther, Chief Engineer at the UK Space Agency. What other issue does he compare this problem with?

Professor Richard Crowther, Chief Engineer at the UK Space Agency:

Perhaps the most alarming factor is, even if we stop launching anything in to orbit from now on we would still see collisions occurring between satellites currently up there. But we recognise that if we want to actively manage this problem we have to do something now. It's like global warming – we're not 100% certain that a certain scenario will occur but we have a pretty good idea of what's dominating and what's influencing the evolution.

Rob: Professor Crowther mentioned an 'alarming factor', so a very worrying piece of information, that even if we didn't put any more objects into space there is already a risk of the current satellites hitting each other. These satellites are the ones that we depend on for communications, watching TV, weather forecasting and for using satellite navigation – satnavs.

Jennifer: Well, that's why he says we have to do something now. He predicts catastrophic – or very bad - collisions could occur every five to nine years unless something is done. He compares the problem with global warming. It's serious. We're not sure what might happen in the future but we do need to protect against it.

Rob: Maybe they need a huge vacuum cleaner, or what about a giant magnet to gather up all that metal **clutter**?

Jennifer: Hmm, I think you're **talking rubbish** – or saying things that will never happen. But there are some more realistic ideas being developed such as using nets, lasers to destroy the pieces of junk and a harpoon to catch them.

Rob: It sounds like science-fiction – something you just read about in stories. But are these ideas really being developed?

Jennifer: Yes, although research is in its very early stages. A harpoon could be fired at a **redundant** - or no longer working - satellite and then it would be pulled downwards to burn up in the atmosphere.

Rob: But, surely up in space, lasers and harpoons might be thought of as weapons which could be used in a space war?

Jennifer: Well, according to Professor Richard Crowther, it is something that will need managing. What does he suggest?

Professor Richard Crowther, Chief Engineer at the UK Space Agency

If you've watched James Bond films over the years, you know that anything with a harpoon, with a laser, with a net in space, has the potential to grab another spacecraft and destroy it, so what we need to do is build reassurance within the space community and demonstrate that the systems being proposed are peaceful in their nature but also peaceful in the intent and the way in which they are going to be used.

Jennifer: He talked about reassuring – or explaining – that the new technology is of a peaceful nature. That means it's not for use in war or violence. He says the intent – or the purpose behind using it – is good not bad.

Rob: OK, well there's one thing back on planet Earth that needs tidying up and that's the answer to today's question. Earlier I mentioned that the Russian satellite, Sputnik, was the first man-made object to be blasted into space. But did you know in which year it was launched?

Jennifer: I said b) 1960.

Rob: And I'm afraid you were wrong! It launched in 1957. OK, we're almost out of time now, so Jennifer, could you remind us of some of the words and phrases we've heard today?

Jennifer: Yes. They were:

junk

mess

debris

disposed of

recovered

clutter

talking rubbish

redundant

Rob: Thanks. Let's get our feet back on the ground now and say farewell. Bye for now!

Jennifer: Bye!

Vocabulary and definitions

junk	rubbish; unwanted or useless things
mess	untidy place
debris	broken pieces from a larger object
disposed of	put away somewhere where they won't cause harm
recovered	get something back to where it came from
clutter	lots of objects in an untidy state
talking rubbish	saying things that are untrue or ridiculous
redundant	no longer needed

Read and listen to the story online:

http://www.bbc.co.uk/worldservice/learningenglish/general/sixminute/2013/05/130502_6min_space_junk

More on this story:

<http://www.bbc.co.uk/news/science-environment-22253966>

More about the launch of Sputnik:

http://news.bbc.co.uk/onthisday/hi/dates/stories/october/4/newsid_2685000/2685115.stm