



# The Victorians

## Brunel - the Great Western railway

Written by John Tuckey

**GEORGE CLARK:** My name's George Clark an engineer. I worked for Isambard Kingdom Brunel on the building of the *Great Western Railway* – a huge new railway line from London to Bristol. The GWR - as it was called - was not the first, but it was the best railway of its time, and Brunel did so much of the work himself. He designed the bridges...the tunnels...he was even architect for some of the stations.

I'm going to tell you about 1851, when the railway was almost complete...and I'm taking my clerk, Arthur, on the train to London to see the Great Exhibition. Arthur's never been on a train before. So as we walked up to the grand station in Bristol, he's more than a little amazed.

**ARTHUR:** George, it's like some kind of palace!

**GEORGE CLARK:** It's a grand building. Designed by Mr Brunel himself.

It is a grand building, and cost a grand amount of money too. I was there when Mr Brunel had to persuade the directors to put up the cash.

**BRUNEL:** There we are, gentlemen, my design for our station in Bristol. A great station for a great railway.

**DIRECTOR 1:** But, Mr Brunel. All these turrets and towers...the expense!





- BRUNEL: People can travel on an ordinary railway, or they can travel on the *Great Western Railway*! I have always said it would be the best railway I never said it would be the cheapest.
- DIRECTOR 2: Indeed not it has already cost us twice as much as you said it would.
- BRUNEL: But think, gentlemen. You have the finest railway in the world. Build this magnificent station, and, as people enter it, they will begin a great experience. That will make them want to travel again, and again. And, they will think, 'The men who run this railway are great men.' That is you, gentlemen!
- GEORGE CLARK: And, not surprisingly, Brunel got the money to build his fine station.
- So now, I'm with my clerk – Arthur - and we're on the platform inside that fine station in Bristol, admiring the steam engine.
- ARTHUR: Is it supposed to do that? It's not about to explode?
- GEORGE CLARK: It's supposed to do that.
- ARTHUR: And we're to travel to London on this monster?
- GEORGE CLARK: In a comfortable carriage behind the engine.
- ARTHUR: All the smoke and noise. Is it safe?
- GEORGE CLARK: It's very safe, Arthur.
- ARTHUR: But what happens to us if we travel so fast? Won't parts of us fall off?





GEORGE CLARK: I've been on this train many times. Am I missing any parts?

ARTHUR: Well, no. But I'm still not sure.

GEORGE CLARK: I persuade Arthur to get on the train, and, though he's nervous to start with, the comfort and smoothness of the ride calmed him.

Now, Arthur we're approaching Maidenhead Bridge, and there's a story about it. Mr Brunel wanted the bridge to be low and flat. So, we built the arches very wide. But, the directors – them as put up the money – got worried about it.

DIRECTOR 1: Mr Brunel, your bridge at Maidenhead– currently nearing completion here. Is it going to stay up?

BRUNEL: Of course it's going to stay up.

DIRECTOR 1: I mean, when there's the weight of a train on it.

BRUNEL: it is a railway bridge, sir. I've done all my calculations taking into account that trains will be going over it.

DIRECTOR 2: But what if it happens that there are two trains on it at the same time, going in opposite directions?

BRUNEL: My calculations take into account that sometimes, there will be two trains on the bridge at the same time.

DIRECTOR 1: Other bridges have arches that wide?





- BRUNEL: No, gentlemen, these are the widest arches that have ever been built anyway in the world!
- DIRECTOR 2: Well, there you are! How can you can say it's safe if no one's ever done it before.
- BRUNEL: But, my calculations...
- DIRECTOR 1: Mere pieces of paper!
- DIRECTOR 2: However, if you leave the wooden scaffolding in place under the arches, it will be secure.
- BRUNEL: But there is no need for scaffoldings!
- GEORGE CLARK: You see, Arthur, they'd had to build a scaffolding before they could build the bridge, to hold it up until it was finished and the bridge could hold itself up.
- ARTHUR: So, the bridge is being held up by the scaffolding, now.
- GEORGE CLARK: Oh, no.
- ARTHUR: No?
- GEORGE CLARK: No, Mr Brunel wasn't going to be told what to do, so he got the scaffolding lowered just a little. It still looked as if it was holding the bridge up, but actually, it wasn't. It wasn't touching the bridge at all.
- ARTHUR: So we're going over a bridge that might fall down?





GEORGE CLARK:

Arthur, we went over the bridge several minutes ago and you didn't even notice.

Arthur and I arrived at the Great Exhibition on time and we enjoyed ourselves enormously. And Brunel...not content with all the challenges he'd faced on the railway...he decided to design ships.

