



Those *Amazing*

Engineers



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Those Amazing Engineers

Have you ever crossed a bridge? Played a video game? Flipped on a light switch? Eaten a jellybean or listened to a CD? Then you've sampled what an engineer does. Engineers touch every part of our lives. Anything that makes our world better, safer and more fun is the work of an engineer. Engineers make a difference!

Most people think of artists and musicians as creative. Engineers are creative too. In fact, they're some of the most creative people around. There are many, many kinds of engineers. Some engineers design and build the roads that get us where we want to go. Others invent new machines, like robot-building robots, or develop materials to make things like lighter tennis rackets and faster skis. Still others soup up super computers, clean our air, put an astronaut in space. And, can you believe it? It was an engineer who invented the Slinky®!

Whatever field they are in, engineers do some amazing things!

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Civil Engineers

Rails, Roads and Really Big Stuff

If it's large, complicated and important to everyday life, it's probably the work of a civil engineer. Civil engineers think big—they design highways, railways and bridges. They make taller and stronger skyscrapers possible. And they regularly pull off near miracles, like building subways beneath busy cities and laying tunnels under the sea floor, sometimes even to connect two different countries! Civil engineers build our infrastructure to last, serving millions of people every day, for many, many years!

Don't be surprised if civil engineering turns up in your kitchen. When water flows from your faucet, that's civil engineering in action. Civil engineers build the systems that bring sparkling clean water for drinking, cooking and (like it or not) for filling up the bathtub. They also design sewage systems to take away waste. Next time you flush the toilet, think of an engineer.



Some civil engineers are devoted to giving us better and better amusement park rides. But before one person sets foot in their thrill machines, civil engineers test and test and test again just to make sure that all those rides are as safe as they are exciting.

■ Straightening the Leaning Tower of Pisa

Remember that beautiful leaning tower in Italy? For 800 years, it had been tilting to the south. In the 1990s, it was tilting so much, it was in danger of collapse. Engineers came to the rescue! By hanging lead weights on the north side of the tower and removing a lot of soil from underneath it, engineers got the tower to stand up more than a foot straighter. It should stay that way at least for the next couple of hundred years.





■ The Big Dig

How do you keep an old, crowded highway open to traffic while a wider expressway is built right underneath? Just ask engineers on Boston's Central Artery Project, the largest highway project in the U.S.



■ Thrills and Chills

Just like skyscrapers, roller coasters are getting higher and higher all the time. Swiss roller coaster engineers worked to design the Top Thrill Dragster™ at Ohio's Cedar Point Amusement Park, the tallest, fastest roller coaster in the world and the first to break the 400-foot-high mark.



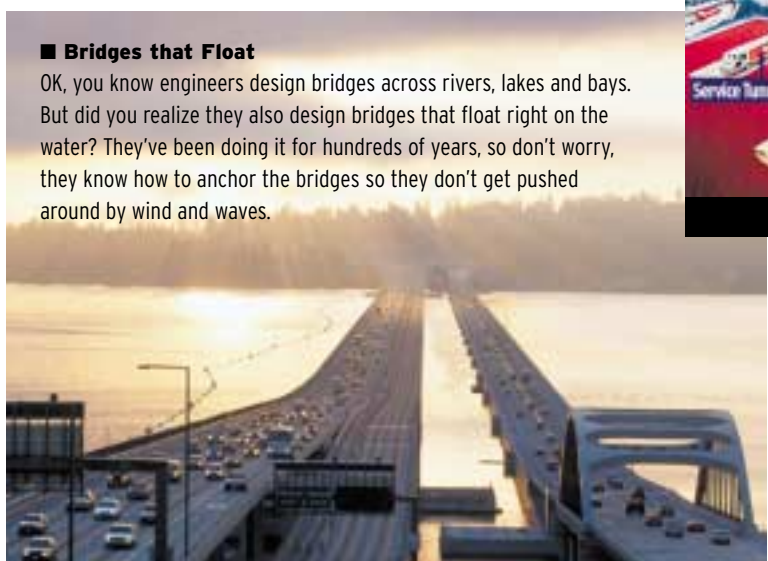
■ Longer and Longer Tunnels

The Channel Tunnel that connects England and France is 32 miles long! The French started to build it from their side, and the English from theirs. The plan was to meet in the middle, more than 100 feet below the sea floor. Sound difficult? You bet, but that's just what they did, with engineers making sure that when the two parts of the tunnel came together, neither was too high, too low, too far to the left or the right to be joined together. That's engineering for you!



■ Bridges that Float

OK, you know engineers design bridges across rivers, lakes and bays. But did you realize they also design bridges that float right on the water? They've been doing it for hundreds of years, so don't worry, they know how to anchor the bridges so they don't get pushed around by wind and waves.



■ Skyscrapers—Higher and Higher

Try building a tower out of blocks—how high can you go before they all come tumbling down? Just imagine what goes into building a skyscraper! Engineers not only have to come up with the right "skeleton" to keep skyscrapers standing tall, they also have to do it so the structure is safe, comfortable... and beautiful.

Right now, soaring nearly 1,500 feet into the sky, the Petronas Towers (at right) in Kuala Lumpur, Malaysia, are among the world's tallest buildings. But watch out—lots of even taller buildings will soon be scraping the sky!

