

SCREAM

Take a wild ride through the history of modern roller coasters BY LAUREN TARSHIS



MACHINES

VIDEO

GO TO
WEB VIEW

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The tallest roller coaster on Earth is called Kingda Ka. The ride has huge drops. It has wild turns. It moves very fast. It lasts 50 seconds. Do you want to try it?

The ride begins like a rocket launch. It goes from

zero to 128 miles per hour in under four seconds. You fly up a tower as tall as a skyscraper. Your heart pounds. Then you go down. *Ahhhhhhhhhhhh!*

Your stomach feels twisty. Your skin stretches against your bones. Are you going to fly off the tracks? *Make it stop!*

And then the ride is over. It was awesome! You want to go again.

Every year, tens of millions of people go on scary thrill rides. Those rides take years to create. They cost tens of millions of dollars. They earn a lot of money for the parks that own them.

Terror and Joy

The history of thrill rides in the U.S. starts in the late 1800s. They began in a town called Mauch Chunk →

VOCABULARY

careening: moving forward quickly without control

grisly: causing horror or fear

engineers: scientists who design and build machines, structures, and complicated products

automatic: being able to work without being directly controlled by a person

harrowing: very upsetting

expressions: the looks on people's faces that show emotions and feelings

[mawk chunk]. It's in Pennsylvania.

For decades, a train brought coal down a mountain. The last part of the trip was a steep drop. The train would go as fast as 50 miles per hour. In 1870, the owners turned it into a thrill ride. They called it the Mauch Chunk Switchback Railway.

At the time, most Americans traveled by horse and buggy. They rarely went faster than 15 miles per hour. Imagine the thrill of **careening** down a mountain at high speeds! Soon, the ride was one of the country's top tourist attractions.

In 1884, the country's first roller coaster opened. It was in Coney Island, New York. By the 1920s, the U.S. was the world's coaster capital. The country had more than 1,500 thrill rides.

Too Thrilling?

Early roller coaster designers competed to make faster and steeper rides. They created "inversions." These are loops that turn riders upside down. Throwing up was common. Some riders blacked out. By the 1930s, several people had died in **grisly** accidents.

But as time passed, things changed. New



THEN The Mauch Chunk Switchback Railway was America's first thrill ride. It opened in 1870 and would reach speeds of up to 50 miles per hour.



NOW Kingda Ka at Six Flags Great Adventure in New Jersey is America's fastest and tallest roller coaster. It goes 128 miles per hour and is 45 stories high!

rides offered thrills with fewer spills (and less vomit). Today's coaster designers are skilled **engineers**. They use high-tech tools. They know how many twists and turns most humans will enjoy.

Materials have changed too. Some tracks are made with steel tubing. It can be molded into tight curves. The Thunderbird coaster is in Indiana. The ride twists around trees and buildings. Riders feel like they're about to crash. (Fun, right?)

Higher, Faster!

Today's coasters are far safer than the rides of the early 1900s. **Automatic** systems stop rides if there's a problem. But accidents happen. Google the words "roller coaster" and "stranded." You'll find **harrowing** stories of people trapped upside down.

Still, people keep lining up for thrill rides. Each year, more than 400 million people visit theme parks in the U.S. and Canada. Dozens of new coasters have opened in the past few years.

In 2023, the Falcon's Flight will open in Saudi Arabia. That's a country in the Middle East. The ride will be taller than Kingda Ka. It will climb 655 feet, drop 525 feet straight down, and reach speeds of 156 mph.

Would you climb on board? •

THE THRILL ENGINEER



COASTER KING

Here's Brendan with a special machine in his lab. It takes people on a virtual reality thrill ride!

Brendan Walker designs and tests roller coasters for a living. We talked to him about his heart-pounding job. BY ANNA STARECHESKI

How did you get into this work?

I started as an aeronautical engineer. I designed jets. But making an aircraft can take 45 years. I needed a faster-paced job.

What do you think about while designing a ride?

I think about the different ways you can move a human body. You can go side to side or front to back. You can go in a circle. Some of those movements feel awful together. Some of them feel great! After I figure out the movements, I add sound, lights, and other effects.

What's your favorite ride?

I love the Rock 'n' Roller Coaster. It is at Disney World in Florida. It's so fun! It has a

soundtrack. You feel like you're riding the music.

How can you tell if a ride is fun?

I use equipment that tracks the riders' heart rates. I use a camera to see their facial **expressions**. Then they take the ride!

Did you always like roller coasters?

No! I was a bit of a scaredy-cat as a kid. When I test a ride, I still get nervous sometimes.

Where's the best place to sit on a roller coaster?

The best place is next to your friend. Having the experience together makes it so much more fun! But I also like the back. I love the feeling of getting pulled over a hill by the cars ahead of you. •



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