Maglev Trains and How they Will Change the World

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Outline of Presentation

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What is a Maglev Train?

MAGLEV train, also called magnetic levitation train is A floating vehicle that runs on magnetic forces. Maglev train propulsion and levitation may involve the use of superconducting materials, electromagnets, diamagnets, and rare-earth magnets.

When did the Maglev come out?

The Maglev has been introduced in 1902, by Alfred Zehden was a German engineer and is considered by many the inventor of the basic maglev concept.

The first design of the magnetic train was released in 1959, and was first built in Hamburg, Germany in 1979 which was closed 3 months after it being built.

England opened the first Maglev train in Birmingham, and made it available for the public in 1984, in which ended up closing in 1995.

Shanghai, China the First High- Speed maglev train was opened which people can ride and use daily.

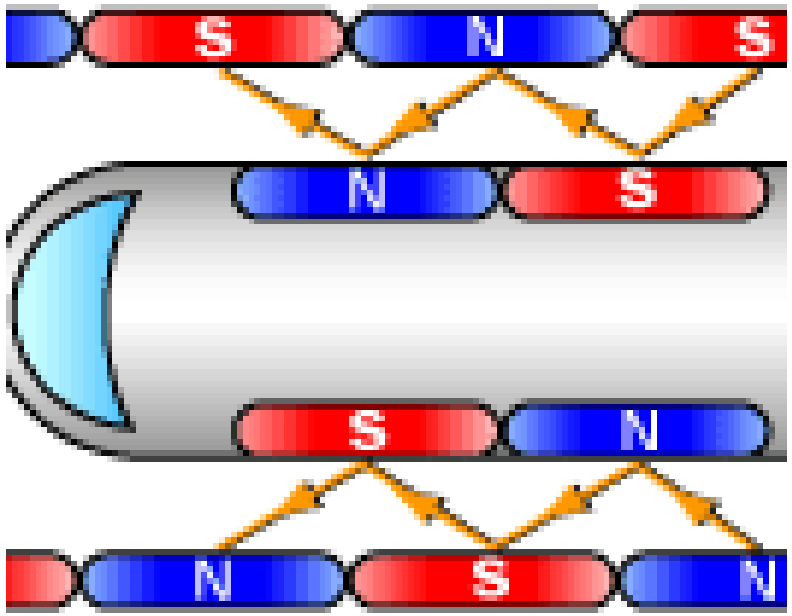
Some of us have seen a Maglev train before.

If you have ever been on the Air Train at the JFK airport, then you have witnessed what a maglev train is, and how it looks.

How do Maglev Trains Work?

Well there are two types of Maglev trains. Japan has a Electrodynamic Suspension System (EDS). This system is based on repelling forces of the magnets.

https://www.youtube.com/watch?v=LFJHvdW4WOE



How do Maglev Trains Work?

Germany has an electromagnetic suspension (EMS) system.

This means that the bottom of the train wraps around a steel guideway. Electromagnets attached to the train's undercarriage are directed up toward the guideway, which levitates the train about 1/3 of an inch (1 centimeter) above the guideway and keeps the train levitated even when it's not moving.

https://www.youtube.com/watch?time_continue=52&v=pT1LXzbtrgM

https://www.youtube.com/watch?v=HXQqfIb-NXc

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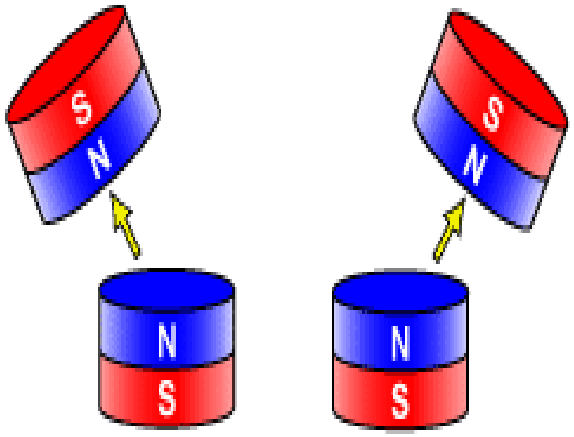
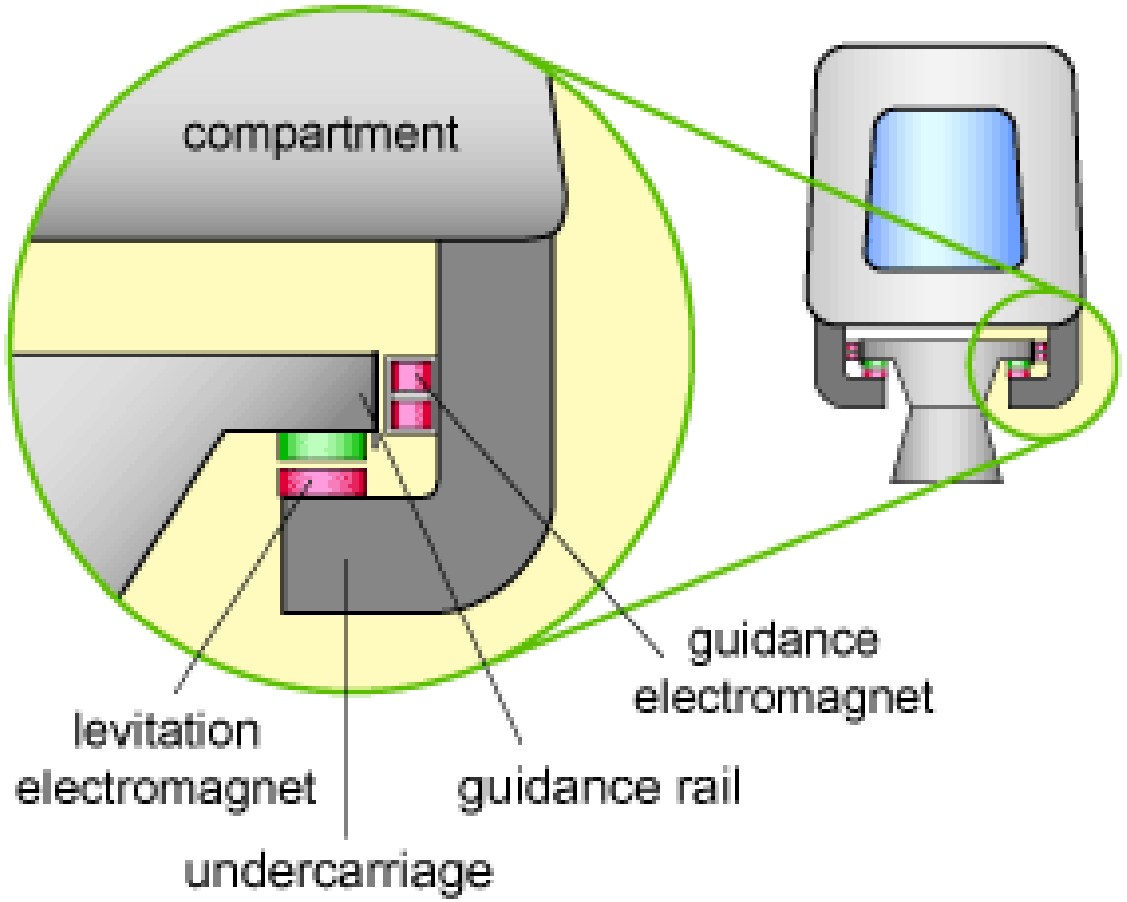
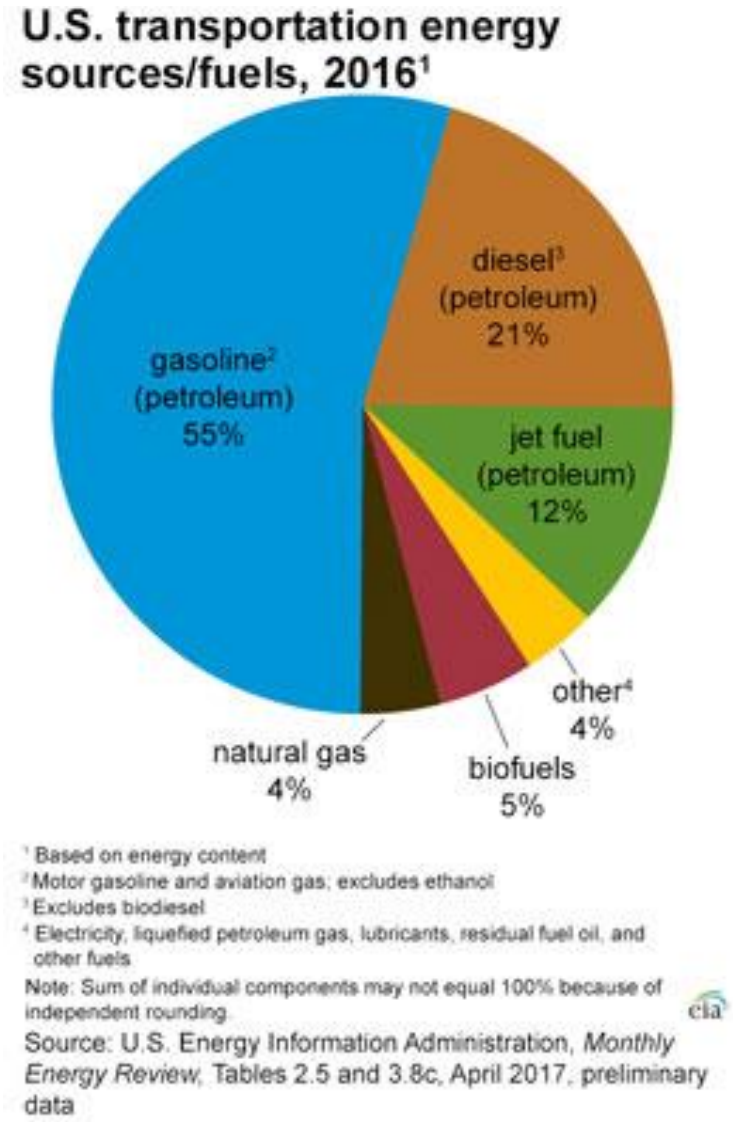




Why do Maglev Trains matter?

If we want to travel to somewhere several hundred or even a few thousand kilometers away by the fastest means, we will probably choose to take an airplane. However, in the near future, a new means of transport will enable us to shuttle across cities at a high speed.

Maglev Trains, are a huge technological advancement in the form of transportation. Maglev trains can cut out an immense amount of electricity usage, and cut out an immense amount of production of green house gases.



Maglev Trains Can replace Flight transportation

The United States is a nation on the move. About 29% of U.S. energy consumption in 2016 was for transporting people and goods from one place to another.

According to the U.S. Energy Information Administration, the United states uses 29% of its energy for transportation. 12% of it is for Jet fuel, 21% is diesel, and 55% is Gasoline.

Maglev Trains can Strictly cut the usage of all those categories, thanks to the high speed, and efficiency of electromagnetic forces.

https://www.eia.gov/energyexplained/?page=us_energy_transportation

How Safe is the Maglev?

As the world is trying to move towards an electrified eco system, the Maglev is the best alternative for electric transportation worldwide. The appeal of the Maglev is to provide mass transit in high speeds which is safe, and reliable, cost efficient and best of yet, friendly to the environment.

The Maglev's system does not touch the guide ways, which has advantages of faster acceleration, Breaking, greater climbing capability, and safer operations in harsh weathers such as, Rain, Snow, and ice storms.

How old is our Transportation system?

There are about 323.1 million people in the United states today. In 2013 there have been 10.7 billion trips on our public transportation systems. That was the highest annual ridership number that has been recorded in about 57 years

The MTA has been founded in 1965, and is still using the same systems since the creation of it. I think it is finally a time for change, instead of just relying on some old repairs on tracks and train cars

The MTA and their Budget

The MTA has an operating budget of $14.6 billon a year, and out of that number toughly half of it is generated by the fare-paying subway and bus riders.

About $5 billion goes to maintaining and improving the systems every year, that’s why we see and hear about the multiple train traffic incidents while on our daily commute to work.

MTA vs MTR

Unfortunately, that is not the case, New York City is in roughly 7th place in the world for the best transportation system in the world.

The MTA's payroll eats up 33% of its revenues — $4.7 billion. Overtime costs $669 million, or 4% of the budget. Health care and pensions account for $2.8 billion.

And then there's the MTA's debt to pay off — $2.2 billion a year in interest alone.

About $5 billion goes into renovating and maintaining the railways every year.

Hong Kong is currently the leader of the best maintained subway system in the world. With a revenue of $25 billion dollars a year, which is about $11 billion more than the MTA. China's transportation system is on a 10.2% annual growth, and employs about 1.3 million workers.