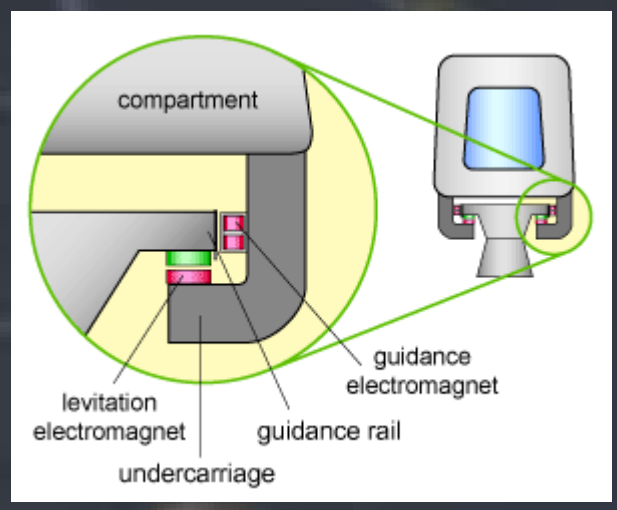
MAGLEV TRAINS

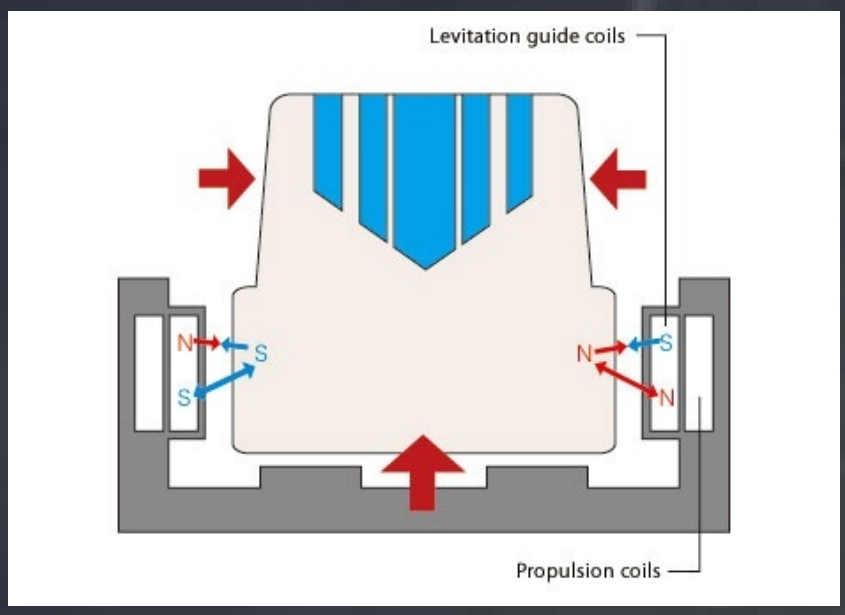
Maglev Trains are trains that use magnetic levitation to move without touching the ground. This is done by magnets which both lift the train up from the ground and propel the train forward. There are only three countries in the world that currently have operational Maglev Trains: China, Japan, and Korea. Maglev trains are much more efficient than traditional trains and hold the speed record for trains (603km/h). There are two propulsion and levitation systems.

Japan: Maglev train

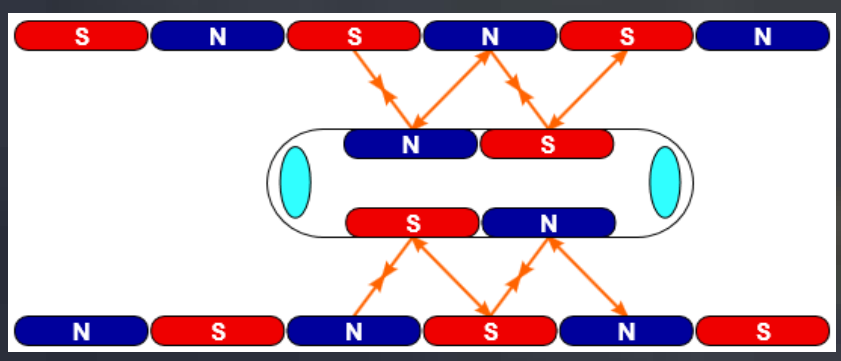
China: Maglev train (Shanghai)

MAGLEV ONE: In the Electromagnetic Suspension (EMS) system the train is wrapped around the track and electromagnets attached to the bottom of the train are attracted upwards to the guide way. The train is held about 1 cm above the track by this attraction. These electromagnets also propel the train and other embedded magnets keep the train in the middle of the track. The train does not need wheels and the maximum speed reached is 482 kilometers per hour

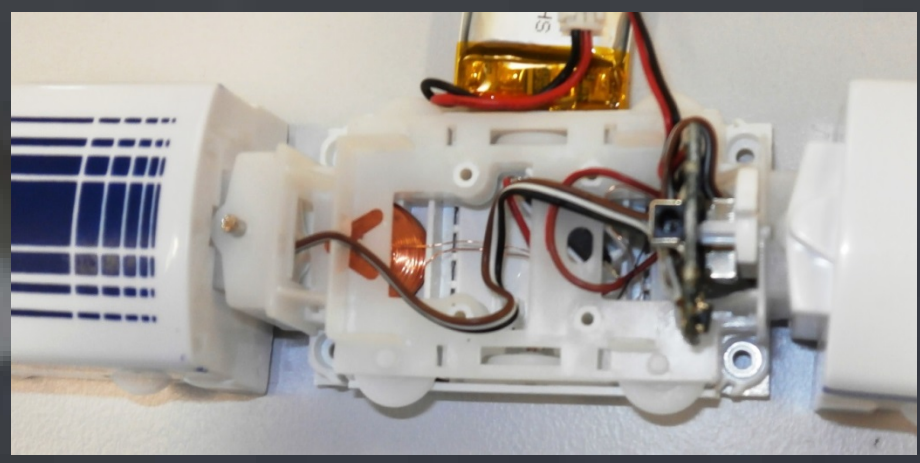




MAGLEV TWO: In the Electrodynamic Suspension (EDS) system magnets are used to create a repelling force between train and track . This force allows the train to levitate 10 centimeters above the guideway. The EDS system also uses super-cooled, superconducting electromagnets that induce currents in the coils embedded in the track sides at speed and provides the propulsion. The train rolls on rubber wheels up to 100 kilometers per hour and then levitates; reaching speeds of 603 kilometers per hour.



EDS system



Inside our MAGLEV train: The coil connects to the track by induction and switches on and off to propel the train