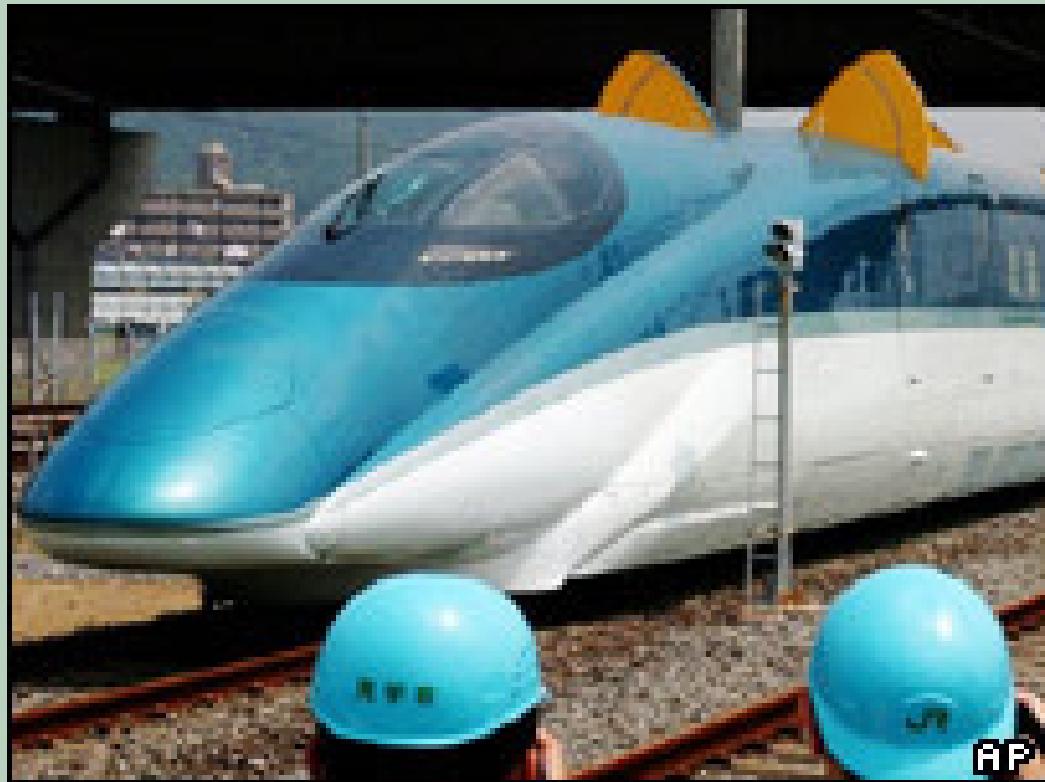


Railway Brakes



Credit : <http://news.bbc.co.uk>



Credit: <https://www.freepik.com>



Credit: <https://link.springer.com>



01



Shoe Brake: This is a traditional brake design where brake shoes are pressed against the tread of the wheel to create friction and slow down or stop the train. It's a common type used in railway braking systems.

02

Disc Brake: Similar to automotive applications, disc brakes use friction between a rotating disc and brake pads to achieve braking. This design is more effective and provides better heat dissipation compared to shoe brakes. Which can be axel mounted or wheel mounted brakes.

03



Axle-Mounted Brake: In this configuration, the braking mechanism is mounted directly on the axle. The brake components move with the rotation of the axle, providing a compact and efficient braking solution.

04



Wheel-Mounted Brake: Unlike the axle-mounted brake, the wheel-mounted brake is directly attached to the wheel. It moves with the rotation of the wheel and is another configuration for achieving mechanical braking.

05



Credit: wikipedia

Clasp Brake: In this design, two clasp brakes are mounted on each side of the wheel, providing effective braking by gripping the wheel tread.



Aero dynamic brakes or Air resistant brake system : An aerodynamic brake system in railways involves using aerodynamic forces, like air resistance or spoilers, to help slow down or stop trains. These systems enhance braking efficiency and contribute to overall safety by utilizing the resistance offered by the air against the moving train.

07



Credit: wikipedia (linear Eddy current brakes)

Magnetic Brakes: Magnetic brakes utilize magnetic fields to provide braking force. They are particularly useful in high-speed trains where traditional friction-based braking systems may be insufficient.

Regenerative Brakes: Regenerative braking systems are commonly used in electric trains. They work by converting the kinetic energy of the moving train into electrical energy, which is then fed back into the power supply system. This type of braking helps to reduce energy consumption and increase overall efficiency. In dynamic braking system generated power will be dissipated as heat through Resistor grid



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