Railway TRACTION

@Babu Mamidi

Factors to be considered for Traction

✅ Type of Rolling Stock

☑️Power Supply Systems

✅Traction Motors

☑️Traction Control System

✅Braking Systems

☑️Energy Storage Systems

@Babu Mamidi

Rolling Stock

How The train set is formed or how motive power is generated.

- Locomotives: Electric or diesel-electric locomotives provide the necessary power for traction.

- Multiple Units (MU): Self-propelled passenger or freight cars that may have their own traction systems. MU also can be Electric or diesel-electric.

@Babu Mamidi

Power Supply Systems

- Overhead Wires (catenary system): Commonly used in electric traction, providing power through wires above the tracks.

- Third Rail: Another electric traction method where power is supplied through a rail alongside the tracks.

- Diesel Engines: Used in diesel-electric traction, generating electricity to power electric traction motors.

@Babu Mamidi

Traction Motors

- Electric motors on locomotives that convert electrical energy into mechanical energy for movement. Alternating Current (AC) type or Direct Current (DC) Type.

@Babu Mamidi

Traction Control System

Control system Manages the distribution of power to the traction motors, optimizing acceleration, deceleration, and energy efficiency. This includes software, traction converter/inverters, transformers etc...

@Babu Mamidi

Braking Systems

This systems for applying brakes, including regenerative braking for recovering energy. This siginificant for smooth operation of train.

@Babu Mamidi

Energy Storage Systems

- Batteries or other energy storage devices that may be used to store and release energy, enhancing efficiency and providing backup power.

@Babu Mamidi

Thank you