Internship Report

Submitted by

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in

ELECTRONIC COMMUNICATION ENGINEERING

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Declaration

NEERATHILINGAM A(Register Number: **953721106028, Batch 2021-24)** Student of **Second Year** B.E - Electronics and Communication Engineering declare that the Internship Training titled **"RAILNET SOFTWARE SOLUTION**" at **MADURAI** from ***08.08.2022*** to ***27.08.2022*** which is submitted by me to Department of Electronics and Communication Engineering, AAA College of Engineering and Technology, Sivakasi to Anna University, Chennai.

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- I wish to convey my thankfulness to Dr.S.SEVUGARAJAN Head of Department for his motivation during this Internship training.
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- I extend my gratitude to all the teaching faculties and non-teaching staff members of our Electronics and Communication department for their encouragement in completing the Internship.

ABSTRACT

- This report is an internship training report submitted in partial fulfillment of requirement for B.E electronics and communication engineering as per norms of AAA college of engineering and technology. We all are visited the all sessions on the railway during this training period and attained technical knowledge and practical experience, after which was able to compile this report. This report consists of brief study and description of material, procedures and equipment used at the site of communication session. Trainers in that session put his best to actual site condition and problem faced at the site and strategy used to deal with them. The main objective of this report is to present the fundamental aspect and knowledge of communication and its emerging sessions

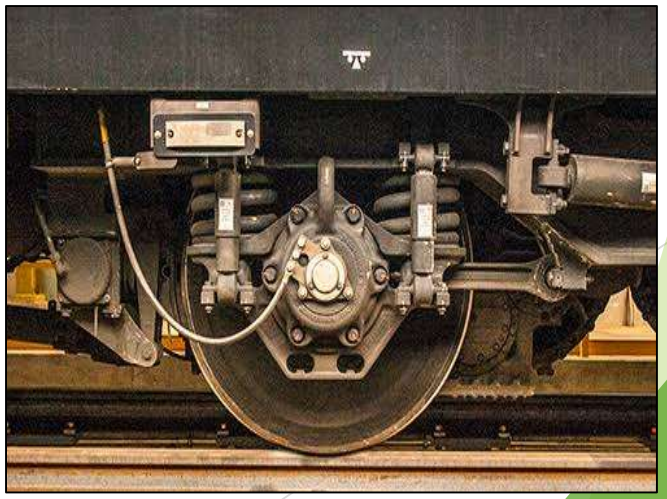
Content

Introduction

There are different types of trains in **Indian Railways**. They are **mechanical, Electrical**, etc. First railway was built between **Mumbai** and **Thane in 1852** and First passenger train ran between the two stations **Borobudur** and **Thane**, covering a distance of **34 km**, on **April 16, 1853** About 40 per cent of the railway lines were in the **newly created Pakistan**. Many lines had to be rerouted through Indian Territory and new lines had to be constructed to connect important cities such as **Jammu**. It runs about more than **20,000 passenger** trains daily, on both long distance and suburban routes, from **7349 stations** across India. The technical departments in Railways are **Civil, Electrical, and Mechanical**.

Working Principle

Many trains operate solely on electrical power. They get the electricity from a third rail, or electrical line, which is present along the track. Transformers transfer the voltage from the lines, and the **electrical current enables the motors on the wheels to move**. A "**Diesel Locomotive**" is a self-powered railway vehicle that moves along the rails and **pulls or pushes** a train attached to it using a huge internal combustion engine running on Diesel fuel as the prime mover or the primary supplier of power.



Breaking System

Keeping in view the safety of human life and physical resources the basic requirements of brake are:

- **The brake must be strong** enough to stop the vehicle during an emergency with in shortest possible distance.
- There should be **no skidding** during brake application and **driver must have proper control ov**er the vehicle during emergency.
- **Effectiveness of brakes** should remain constant even on prolonged application or during descending on a down gradient
- **Brake must keep the vehicle in a stationary position even when the driver is not present.**

The brake used in railway vehicles can be classified according to the method of their activation into following categories.

Pneumatic Brake

Electrodynamic Brake

Mechanical Brake

Electromagnetic Brake

may be further classified into two types

Vacuum Brake

Compressed air brake

Railway track(point)

Points and crossings are provided to help transfer railway vehicles from one track to another. The tracks may be **parallel** to, diverging from, or converging with each other. **Points and crossings are necessary** because the wheels of railway vehicles are provided with inside flanges and, therefore, they require this special arrangement in order to navigate their way on the rails. The points or switches aid in diverting the vehicles and the crossings provide gaps in the rails so as to help the flanged wheels to roll over them. A complete set of points and crossings, along with lead rails, is called a *turnout*. **Any one foreign matter gets stuck at the point, the point is not fixed in the track . Hence it affects the timing variation of the train. The point is used to change the direction of train**

Alternator

- The locomotive has to carry its own fuel to provide energy for the diesel engine. The engine drives a main alternator to **provide power for the electric motors** and an auxiliary alternator which provides hotel power for the locomotive and the train it hauls.
- Alternator is used to every coach for **electric supply** (fan, light and etc.)
- Alternator is contains **all coaches**.
- The four belts are **rotate** repeatedly and some process take place then **electric power is produced in alternator**

140T Crane

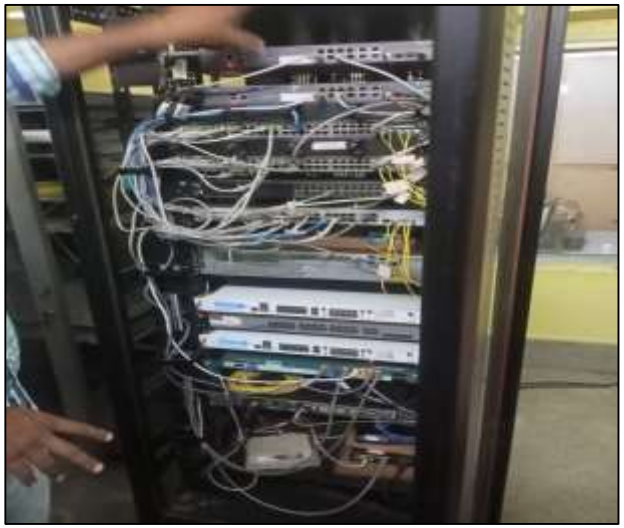
The CCS 140 - 10T is one of the most sophisticated diesel hydraulic railway breakdown cranes to be seen anywhere in the world and incorporates the following innovative features:

- The latest state of the art technology for **hydraulic drives** allows continuous and smooth control of all movements of the crane at the same time independently and within the diesel hydraulic power unit capacity. Hydraulic control gives self adaptation of the speed to the motor load as well as overload protection.

Crane weight -140 ton*

Control section in train

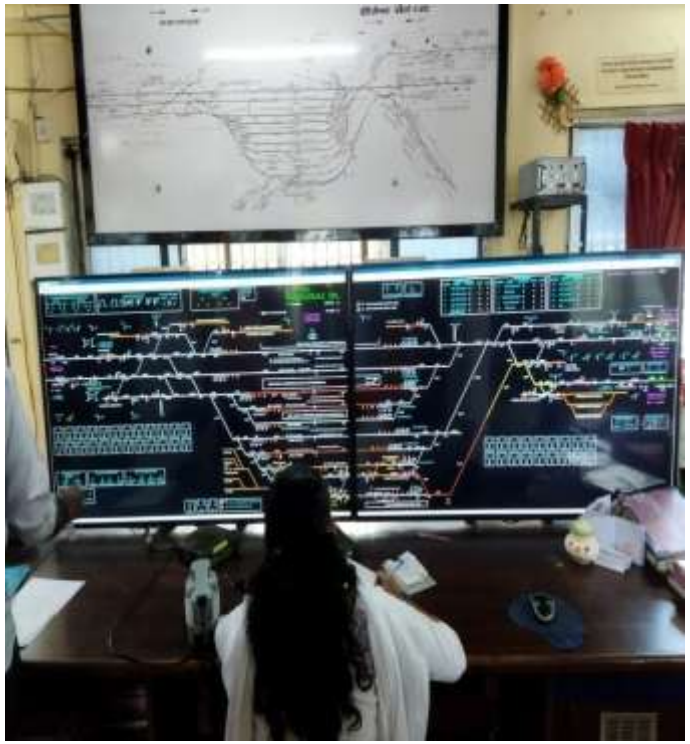
- Train control systems are the **hardware and software equipment that monitor train locations and movements in order to ensure safety**. They are essential for smooth traffic, thanks to real-time monitoring and reliable communication channel.
- **Block system is operate one station to next (near) station and same timing at train start before , this process is take place.**
- **Only if this process is happens will train take off**



System Communication Indication

- **White - Empty Space**
- **Red - Already Occupied this place**
- **Yellow - already booking this place**
- **Violet - Block** or **unblock**

One person is control North Side and **Another person is control South Side**



Train coach

- The train is consists of **maximum coach 24 and minimum coach 20** . The every coach contains separate **600 liter water tank , restroom and eight wheels**
- **Logo engine consists 12 wheels**
- **The maximum speed of logo is 120 km/sec**
- **Every coach consist current supply from alternator**

Maintenance

Cleaning, maintaining, servicing and repairing a wide range of railway equipment and machinery

* working on engines, wagons, carriages and other rolling stock, cranes and power supplies

* working on both diesel engine and electric trains, or special in one of these

* making regular checks on equipment according to a planned schedule

* carrying out regular maintenance work such as cleaning and oiling locating faults, carrying out repairs and replacing parts

Safety and drawback

A train maintenance technician maintains and repairs trains and other railway equipment and machinery to the highest standards, ensuring safety and comfort for both passengers and crew. They are also known as traction and rolling stock technicians or engineers or fleet maintenance engineers.

Rail Transport

* Advantages

- High Speed.
- Suitable for Long Distances.
- Bulky Goods.
- Protection.
- Large Carrying Capacity.

* Disadvantages

- Huge Capital Expenditure.
- High Overheads.
- No Door to Door Service.
- No Competition.
- Inflexible Mode.

Conclusion

- The greatest advantage of the railway transport is that it is the most dependable mode of transport as it is the least affected by weather conditions such as rains, fog etc. compared to other modes of transport. The rail transport is better organized than any other form of transport. It has fixed routes and schedules. Its speed over long distances is more than any other mode of transport, except airways.
- Thus, it is the best choice for long distance traffic. Railway transport is economical, quicker and best suited for carrying heavy and bulky goods over long distances. Railway is the safest form of transpor

THANK YOU