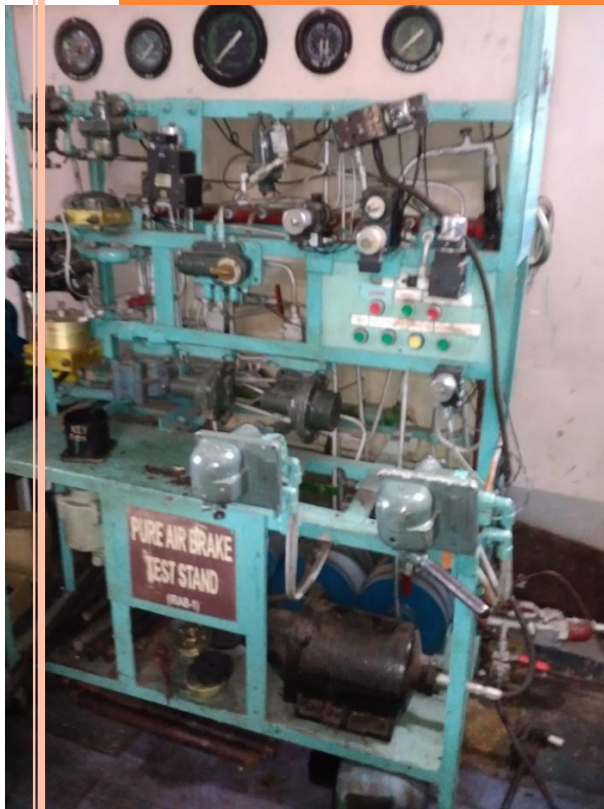




TECHNOLOGICAL IMPROVEMENT IN BRAKE SYSTEM IN DIESEL ELECTRIC LOCOMOTIVES

**From Bracket Mounted Valves With Pipelines to Panel
Mounted Brake System and CCB and Finally from
Version 1.5 to 2.0**

28 IRAB 1 SYSTEM



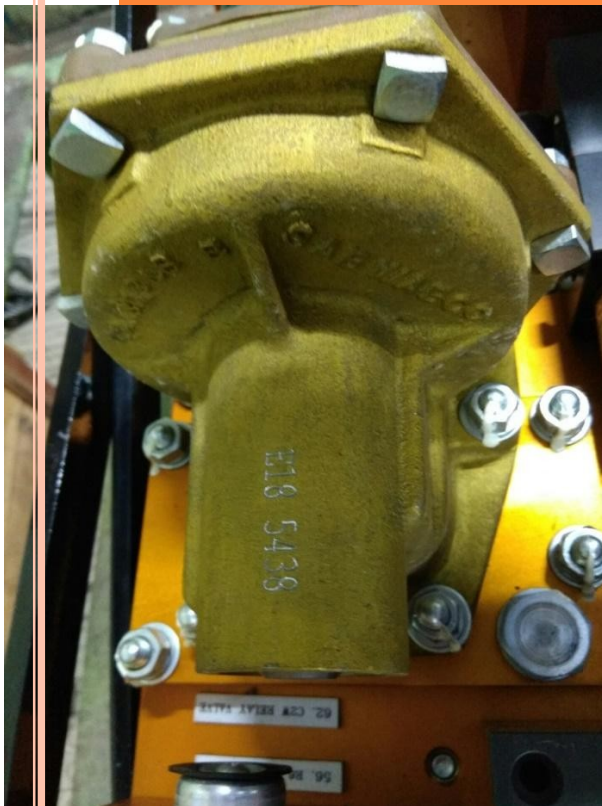
AIR COMPRESSOR IN COMPRESSED AIR SYSTEM



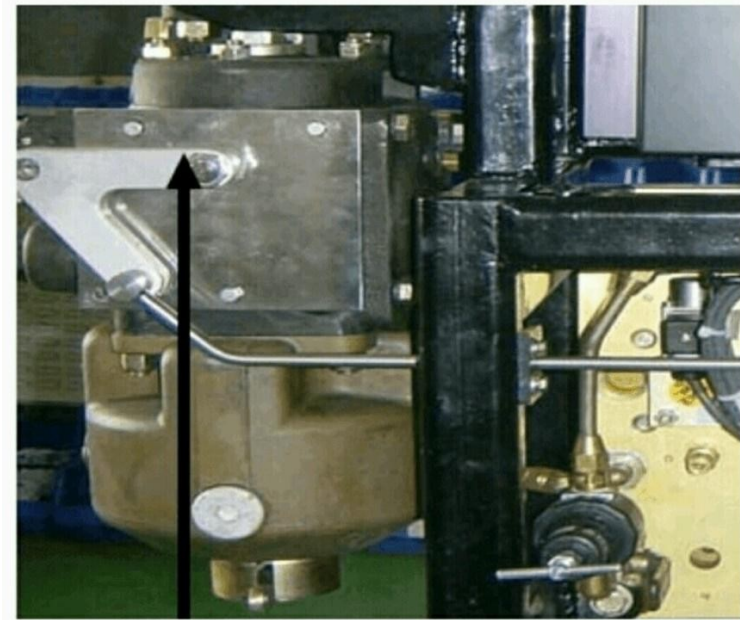
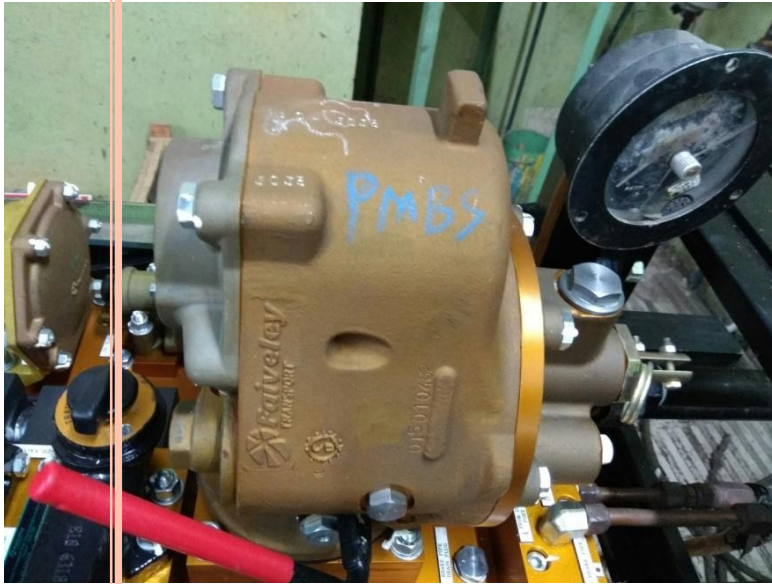
FEED VALVES



C2 RELAY AIR VALVE



DISTRIBUTER VALVE



KE (C3W डिस्ट्रीब्यूटर वाल्व)

C2N FEED VALVE



RELAY VALVE FOR AIR FLOW

SIL Panel



Calverey Panel

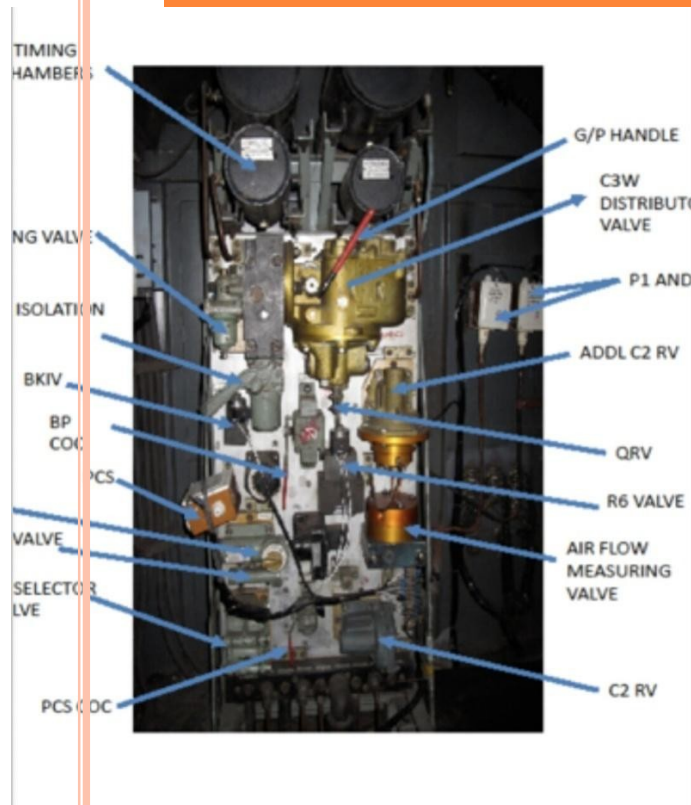


SWITCH OVER FROM NON-MODIFIED ABD TO EMD TYPE

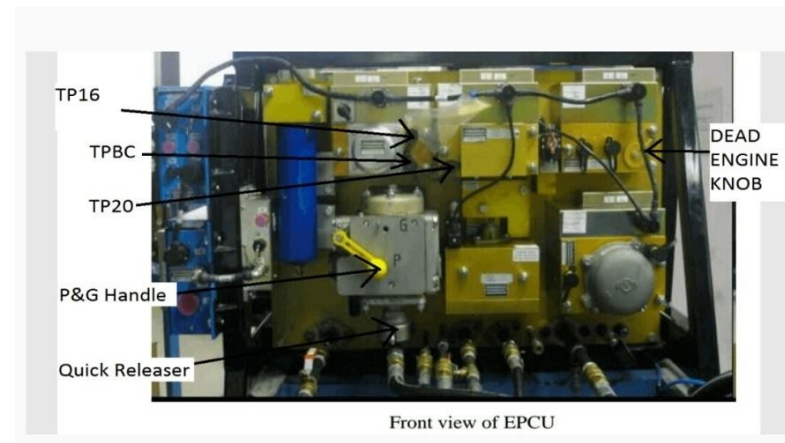
- At first Non-modified ABD valve with isolating cock was used in Locomotive for MR tank auto blow down.
- Non- modified ABD is replaced by Barrel type modified ABD valve with isolating cock.
- Presently Barrel type ABD with isolating cock is fully replaced by EMD type ABD only i.e. no additional isolating cut out cock with pipelines.



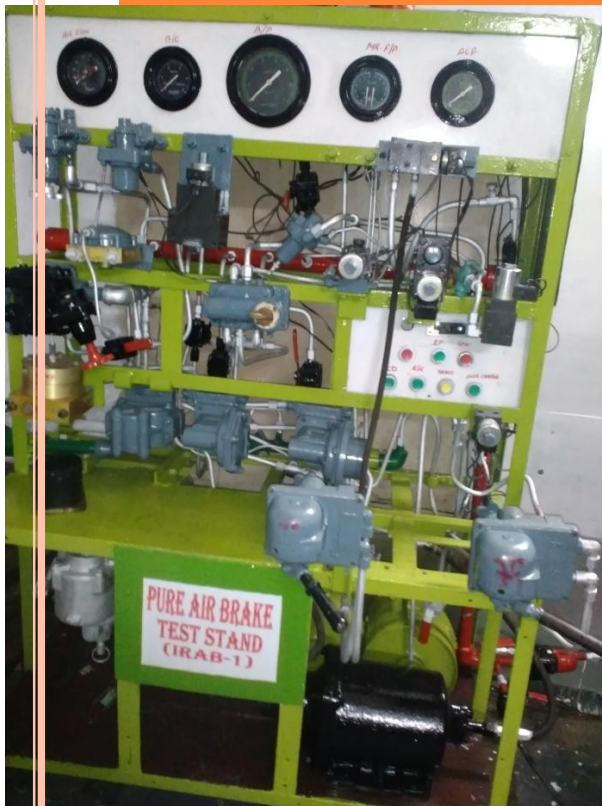
IRAB1 VS CCB



CCB 1.5 VS CCB 2.0



AIR BRAKE TEST STAND



ALCO TO EMD



Technological Uplifting and inclusion of components in Diesel Electric Locomotives

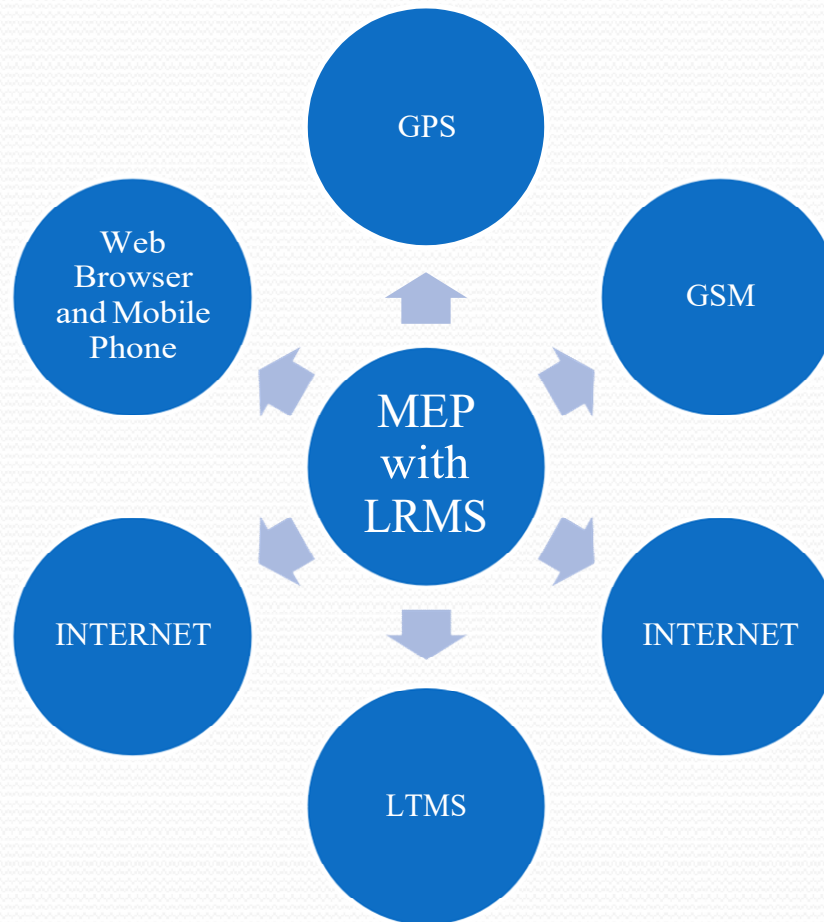
REMMLOT

Remote Monitoring and Management of Locomotive and
Trains

Terms related with REMMLOT

- GPS – Global Processing System
- LTMS – Locomotive and Train Management System (Centralized Server)
- LRMS – Locomotive Remote Monitoring System
- GSM – Global System for Mobile
- MEP – Microprocessor based Excitation and Propulsion

Flow chart of REMMLLOT



Location of REMMLOT accessory (Antenna)

This accessory is located near Long hood lookout glass. This helps to send and receive signal to LRMS and/GPS, from MEP.



Location of REMMLOT Card and

Data Downloading

- REMMLOT card is fixed in the extreme left slot of on MEP card bay when facing toward MEP screen on version 3.0
- For Data downloading on Laptop, loconet.in site to be opened through Google search.
- For KGP based locomotives, ID is kgp_shed and Password is v8r8H3Q3 (For ID, underscore to be used)

Brief Description

- ❑ REMMLOT system is supplied by M/S MEDHA to IR.
- ❑ LTMS is centralized server hosted in the Internet by MEDHA for railways use and located at Hyderabad for round the clock monitoring server.
- ❑ MEP with antenna always send signal through GPS to LRMS and again receive signal from GPS, GSM, LTMS, Web browser and Mobile phone and vice versa.
- ❑ It is a postpaid connection.
- ❑ It generate reports like health status, fault status, data pack, event recorder data and other information related to running of Locomotives and Trains to be used by Railway Management for decisionmaking.



Advantages

- ❑ Locomotive health data- once in every 10 to 30 minutes- such as notch, speed, LOP, BAP, BATV, BATI, TAAI, TAV, VCD application & GPS location.
- ❑ Fault data with data packs – as and when faults occurred , fault data for 3 seconds before the fault and 5 seconds after the faults.
- ❑ Loco position can be closely monitored with the p interface.

Ma

Technological Uplift in Diesel Electric Locomotives

APU

Auxiliary Power Unit



Introduction

- In KGP based Locomotives first APU concept is installed in Loco No. 17973/ WDM2 by M/S SIL.
- In this technology , both fuel and lube oil saved by main engine stop after 10 minutes when locomotive is in neutral and IB is applied.
- When MR pressure drops from 8 to 6 kg/cm², main engine restarts.
- There was no Auxiliary engine with other accessories.
- This unit was fixed near analog LOP and FOP gauge.
- This technology is not successful.



Components Related With APU

- ❑ Small IC Engine
- ❑ Small Air Compressor
- ❑ Small Alterator for Battery Charging (Both Main and APU Battery)
- ❑ All the above mentioned components are directly coupled and in compact in a box and located in Nose Compartment.



Conditions for Operation of APU

1. Reverser Handle will be in Neutral
2. Locomotive independent brake in Full Apply Condition
3. Both EOT(Engine Oil Temperature),EWT(Engine Water Temperature) Sensor will be in good and working condition.
4. MR pressure will vary from 8 to 10 kg/cm².
5. Battery charging current below 10 A.
6. No fault to be logged related to APU on MEP display.



Salient Features

- ❑ After 10 minutes, fulfilling the previous slide conditions, APU engine will start and main engine will stop.
- ❑ For APU engine diesel oil consumption is 2.5 liters where as for main engine 24 to 25 liters per hour.
- ❑ Saving is 22 liters per hour approximately.
- ❑ If APU malfunctioned, there is a toggle switch on breaker panel and battery knife switch in nose compartment.
- ❑ APU unit schedule and repair work are done by MEDHA representative.