

## Achievements & Highlights of TRO Department Mumbai Division (2023-24):-

### ANDROID APPLICATION OF “SAY NO TO SPAD”

This app includes all safety, traffic and operating instructions, manuals, rule books, troubleshooting directories, signal layout, quizzes, E-road learning videos etc. for easy one point reference of crew.

[https://drive.google.com/file/d/1B\\_Dy\\_dNDKeoAHsnlvvC6aNkWCmQv4zaf/view?usp=share\\_link](https://drive.google.com/file/d/1B_Dy_dNDKeoAHsnlvvC6aNkWCmQv4zaf/view?usp=share_link)



### RS FLAP VALVE SIMULATOR

RS flap valve simulator has been installed in CSMT, KYN & PNVL lobbies. CLIs are giving practical demonstration to ALPs to remove their hesitation in operating RS valve when needed.



## **SPEEDOMETER CHART ANALYSIS**

New software for Speedometer Chart Analysis of Suburban and Mail train has been developed and same is being used for speedometer chart analysis of crew and analyse their way of working.

**SPM Data & Driving Skill Analysis**

CMS ID  Crew Name  Future Use  For Reports

Designation  Process Data

[Open Data Entry Sheet!](#)

[View Reports...](#)

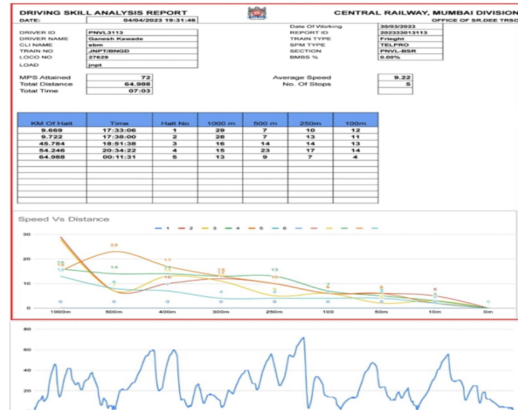
Date of Working  Halt!

Train Number  Loco Number

CLI Name

Load  BMBS %

Train Type  SPM Make



## **SCAN-ABLE QR CODES**

This have been developed for downloading Digital E-book of various troubleshooting, News-letter, Case studies etc. for Running staff whereby crew can scan the code and refer the required instructions.



## **VR BASED TRAINING MODULE**

In Mumbai division daily 1810 suburban services are being run on main line, Harbour line, trans-Harbour & BSU line by 800 motormen. During running of these services sometimes online trouble related to EMU comes which needs to be attended by motorman on line to minimize repercussion. However, sometimes it is felt that due to less hands –on trouble-shooting experience, motorman find it difficult & time consume to trouble-shoot any fault in their train. Motorman can be given training in virtual reality mode have batter trouble-shooting skills for the same 01 No. VR head set has been introduce in the system.

The VR headset includes a browser to view websites. The drivers are able to train using the videos remotely and wireless at any location without the need for expensive computer hardware.



## **COMPUTER BASED COUNSELLING**

Computer based counseling has been started in CSMT, KYN & PNVL Crew booking Lobbies. Through this crew has been counseled by CLI regarding all the operational attributes.



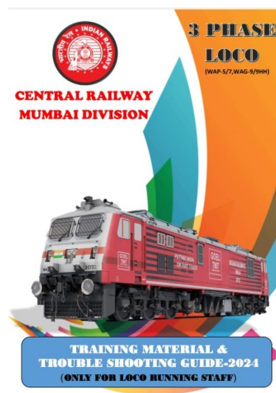
## **AUTOMATIC DRIVER ASSISTANCE SYSTEM (ADAS)**

Driver Fatigue Monitoring System is designed to accurately predict and identify situations where drowsiness and fatigue may be setting into a driver but also to alert those drivers.



## **BOOK PUBLISHED**

New updated Three phase loco book published and circulated among the crew.



New Updated Station Layout Book. Covering complete beat of crew of adjacent division.





## **CVVRS ANALYSIS**

Crew Voice & Video Recording System (CVVRS) has been installed by Indian Railways which shall ensure effective and tamperproof video and voice recording of locomotive cab and track view for post event analysis. CVVRS data is being downloaded by car shed/trip shed & same is being analysed by CLIs. Abnormalities noticed by CLIs has been put forward to officials for further actions.

## **CREW BOOKING LOBBIES**

- Clinical Psychologists for Crew counseling hired and has been provided at CSMT, PNVL & KYN Lobbies.
- Procurement of CMS KIOSK (66 Nos.) is sanctioned as per HQ advised. Centralised procurement is being done by BSL Division.

## **RUNNING ROOM**

- ROHA Running Room is taken over from KRCL on 21.12.2022. AC provision has been done at Running Room.



OLD



NEW

- PNVL yard Running Room has been shifted into new building after yard remodelling from 10.11.2023.



NEW

- Augmentation of Running Room at IGP & LNL for enhancing Bed capacity has been sanctioned. At IGP, 20 beds for Train Manager & 32 Beds for LPM/BB, Similarly, at LNL, 20 Beds for Goods Crew have been sanctioned. Work will be completed in 2024-2025.
- Old Office of Sr.DEE/TRS/SNPD renovated and converted into 30 Beds occupancy running room for sanpada car shed & started on 18.03.2024.



OLD



NEW

- 07 Nos RO plants have been provided at IGP, LNL, PNVL, CSMT & KYN Crew Booking Lobbies & Running Rooms.



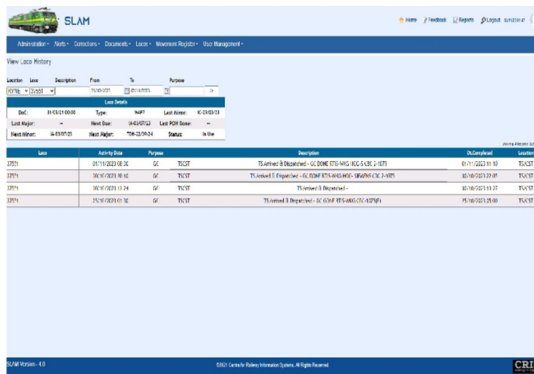
## SLAM (SOFTWARE FOR LOCOMOTIVES ASSET MANAGEMENT)

SLAM is for management of Electric Locomotive for Loco Maintenance, Operation, Schedules Planning, Execution and Monitoring. This software system envisages development of software for interlinking sheds (including out pits), divisional/Zonal headquarter, workshops, CLW, RDSO and Railway Board (Ministry of Railways). TRO department started working in SLAM at Following Locations:-

Electric Loco Trip Sheds – CSMT, VVH, LNL, IGP

Electrical Control Office CSMT

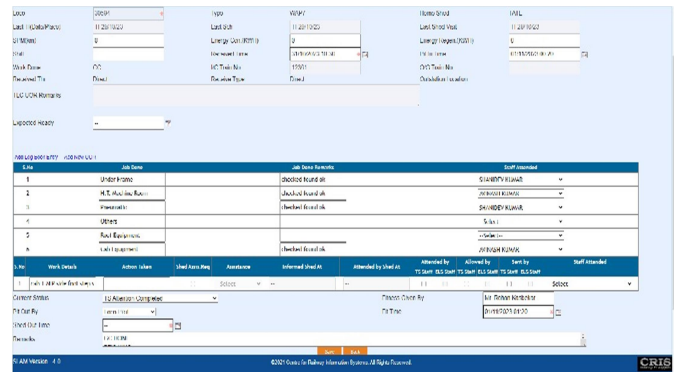
### Loco History



The screenshot shows the 'Loco History' interface in the SLAM software. It includes a navigation bar at the top with options like 'Applications', 'Tools', 'Database', 'Reports', and 'User Management'. Below this, there's a 'View Loco History' section with a table listing locomotive movements. The table has columns for Loco No., Date, Time, From, To, and Remarks. A search bar is visible at the top right of the table area.

Loco No.	Date	Time	From	To	Remarks
101	10/10/2018	10:10	CSMT	CSMT	Loco 101 is in CSMT
102	10/10/2018	10:15	CSMT	CSMT	Loco 102 is in CSMT
103	10/10/2018	10:20	CSMT	CSMT	Loco 103 is in CSMT

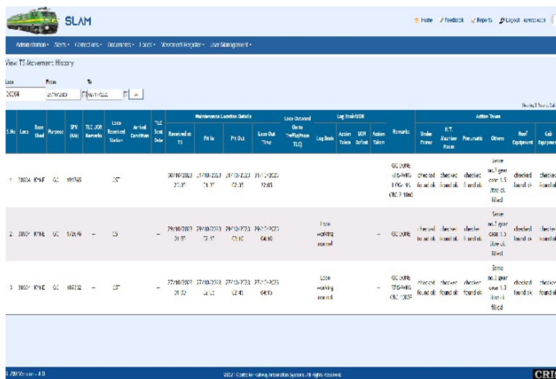
### Loco Entry in Trip Shed



The screenshot shows the 'Loco Entry in Trip Shed' interface. It features a form for entering locomotive details, including Loco No., Date, Time, From, To, and Remarks. There are also sections for 'Loco Entry in Trip Shed' and 'Loco Entry in Trip Shed' with dropdown menus and buttons. The interface is designed for data entry and management.

Loco No.	Date	Time	From	To	Remarks
101	10/10/2018	10:10	CSMT	CSMT	Loco 101 is in CSMT
102	10/10/2018	10:15	CSMT	CSMT	Loco 102 is in CSMT
103	10/10/2018	10:20	CSMT	CSMT	Loco 103 is in CSMT

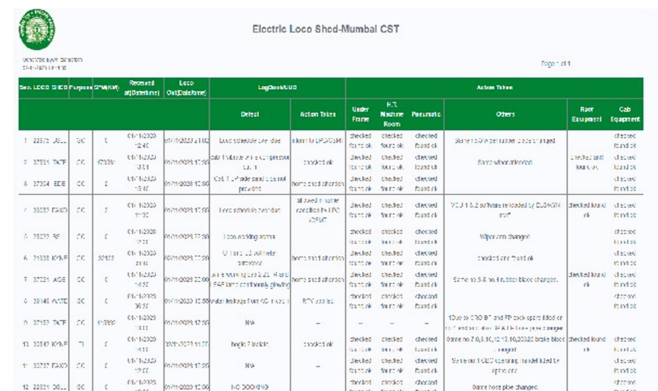
### Loco Movement



The screenshot shows the 'Loco Movement' interface. It displays a table with locomotive movements, including columns for Loco No., Date, Time, From, To, and Remarks. The table is filtered to show movements for a specific date and time range. The interface includes a search bar and a 'View Loco Movement' button.

Loco No.	Date	Time	From	To	Remarks
101	10/10/2018	10:10	CSMT	CSMT	Loco 101 is in CSMT
102	10/10/2018	10:15	CSMT	CSMT	Loco 102 is in CSMT
103	10/10/2018	10:20	CSMT	CSMT	Loco 103 is in CSMT

### One day Report of Trip shed



The screenshot shows the 'One day Report of Trip shed' interface. It displays a table with locomotive movements for a specific date and time range. The table includes columns for Loco No., Date, Time, From, To, and Remarks. The interface includes a search bar and a 'View Loco Movement' button.

Loco No.	Date	Time	From	To	Remarks
101	10/10/2018	10:10	CSMT	CSMT	Loco 101 is in CSMT
102	10/10/2018	10:15	CSMT	CSMT	Loco 102 is in CSMT
103	10/10/2018	10:20	CSMT	CSMT	Loco 103 is in CSMT

## **TRIP SHED**

- Work of “LTT - Creation of Trip maintenance / Advance Inspection Centers for inspection & maintenance activity of Electric locomotives Development” of New Trip shed of two pit lines at VVH & extension of existing trip shed along with New Ground + 2 Floors Building has been proposed. Same has been sent to Railway Board sanctioned after obtaining PFA concurrence.
- Work of “Renovation works at Electric Loco Trip Sheds, CSMT, LNL & IGP” has been approved by GM/C.Rly. Same is forwarded for Associate Finance vetting.

## **TRIP SHED WORKING**

- HOG Filter cleaning started during Trip Inspection.



- OCB Radiator Air flow is being measured through Anemometer & Radiator is being cleaned with water & compressed Air to improve the Air Flow.



**BEFORE**



**AFTER**



## **NEW MEASURING INSTRUMENTS USED AT TRIP SHED**



**WHEEL PROFILE GAUGE**



**H TYPE CBC GAUGE**

## **OUTSOURCING**

- Outsourcing of Loco Cab Cleaning & Loco Look out Glass Cleaning at Trip Sheds of BB Division has been awarded. Through this, manpower of Trip sheds has been saved & hence, utilized for proper technical work.