

ELECTRIC LOCO SHED, SANTRAGACHI

Introduction

Electric Loco Shed, Santragachi is a coaching loco shed started its activities 26.01.1999 with holding of 6 no. of WAP-4 locomotives. Since then it has been catering requirements of ever increasing mail / express trains of S. E. Railway with utmost care and superior reliability.

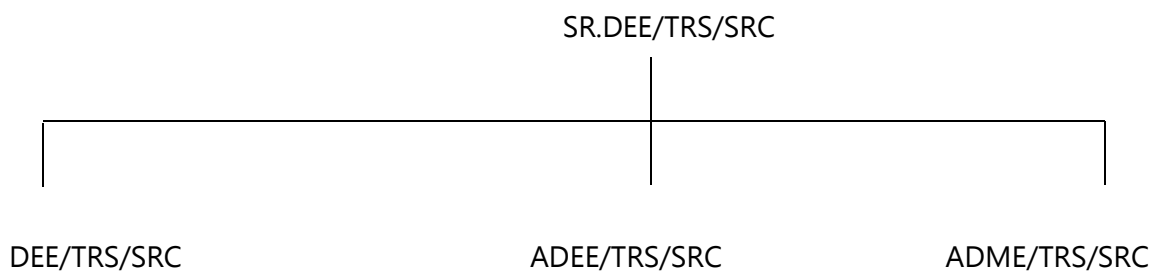
WAP7 locomotive was introduced in ELS/SRC on 13.11.2017.

From September'20, Satellite Shed /Santragachi, maintaining diesel loco has come under the control of Sr.DEE/TRS/SRC of ELS/SRC.

Loco Holding as on 30.06.2021:

Electric Loco	WAP4	35
	WAP7	53
Total Electric Loco		88
Diesel Loco	WDS6	10
	WDG4D	06
	WDM3A	02
Total Diesel Loco		18
Total Loco Holding		106

Organization Chart



Performance

Sl. No.	Items	Actual 2019-20	Actual 2020-21	HQ's Target for 2021-22	Actual 2021-22 (up to May'21)
1	Average Loco Holding	102.82	105.23	---	85.85
2	% Ineffectiveness (Statistical)	6.29	2.26	6.50	3.35
3	% Ineffectiveness (Hourly)	10.36	3.47	10.00	7.20
4	Punctuality Loss Cases (Loco Account)	56	09	To be reduced by 5% from last year actual	07
5	Punctuality Loss Cases (Loco Account) / 100 locos / year	54.46	08.55		48.92
6	Major Schedule TOH	26	SRC: 46 TATA: 02	SRC: 43 TATA: 10	SRC: 08 TATA: 02
7	Major Schedule IOH	15	04	07	00
8	Minor Schedule	491	322	---	51
9	Commissioning of Loco	09	02	---	01

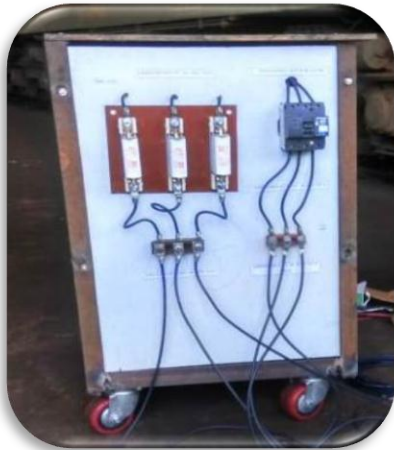
Regular Shed Activities For Improving Reliability

- Maintenance Schedule:
Carrying out of Minor Schedule: Average 30 locos / Month.
Carrying out of Major Schedule: Average 04 Locos / Month.
- Intermediate Normal Checking of WAP7 locos in 45 days: Gap between two consecutive minor schedules of WAP7 locomotive is 90 days. So, improving reliability & avoiding line failure; this class of locomotives is taken for Normal Checking in 45 days after Scheduled Inspection and downloading & analyzing of VCU data also done.
- Filter cleaning of WAP7 (3-Phase) locomotives are done at ELS/SRC in regular interval for keeping machine room dirt-free which improves reliability of 3-Phase locomotives.
- Measurement of Return Path Current of WAP7 locomotive is done during Normal Checking, Minor Schedule and Major Schedule respectively. It ensures reliability of power circuit.
- Air Delivery measurement with Anemometer at specified location of machine room and under frame of WAP7 locomotive is being done during Normal Checking, Minor Schedule and Major Schedule respectively for maintaining air pressurized machine room and proper cooling of apparatus as well.
- Greasing Practice: Use of moisture-free air during greasing of axle box, TM & MSU by providing an Air Dryer and filter in the air supply line to avoid Bearing seizure and Axle lock.
- Cable Checking: A special drive has been launched for cable checking of locomotives and subsequent repairing work if found any anomaly.
- Super checking of locomotives: Super checking is being carried out by officers & supervisors before shed out of locomotives to avoid line failure.
- Checking of Pantograph: Joint-Checking of Pantograph between TRS and TRD staff being carried out regular basis to avoid failure of Pantograph.
- Technical Training / Meeting / Seminar: Training / Meeting / Seminar on various technical issues of locomotives is held at shed time to time. It enhances technical know-how of staffs.
- Safety Precaution: i) A Safety Committee has been formed comprising with officer, supervisor and staff.
ii) Safety seminar / meeting with staff in regular interval.
iii) Practical demonstration of safety procedure in working field.

System Improvement

1. On load testing facility for Hotel Load Converter:

ELS/Santragachi has developed an "On load testing facility for Hotel Load Converter in June'20. On load testing being carried out with this testing kit; which helps to know whether the trouble was in converter or not. This set up is completely in-house build up by ELS/Santragachi by using 60KVA TFP (which is used in LHB coaches).



2.Modification in Pneumatic Circuit of VCB:

ELS/Santragachi has done an in-house modification by providing an Air Dryer in pneumatic circuit of VCB to arrest ingress of moisture in VCB. As a result, moisture-free air can be fed to VCB



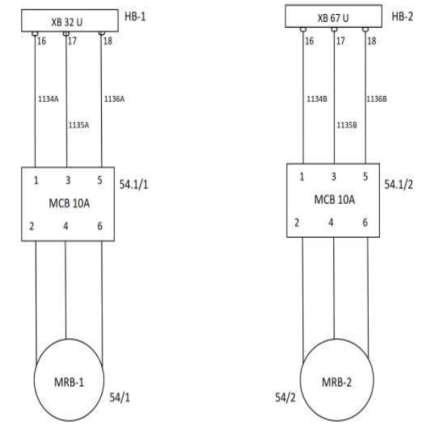
3.Modification of Pneumatic Pipe Line in FB Panel:

ELS/SRC has done an in-house modification by providing copper pipe (10 sq.mm) in place of thermoplastic type flexible pneumatic pipe in FB Panel. Because Thermoplastic air tube ferrule may be dislocated as improper griping on Thermoplastic type pipe.



4.Modification in MRB Circuit:

MRBs in 3-Phase locomotives work in cooling mode with unbalanced split phase supply system which caused frequent failure of MRB. Elimination of cooling mode operation



ELS/Santragachi has made an modification by shifting existing supply arrangement of MRB to Auxiliary Converter-2 in locomotive fitted with IGBT based converter will prevent the failure of MRB.

5.Universal Test Bench for Master Controller of conventional locomotives:

A universal test bench for different types of Master Controllers of conventional locomotives has been commissioned at ELS/SRC in January'21. Dropping of mill volt during closing of contacts of different types of Master Controller (MP) used in conventional locomotives



can be measured in this test unit. Data can be recorded in laptop for analysis in future. It improves overhauling / maintenance procedure of Master Controllers.

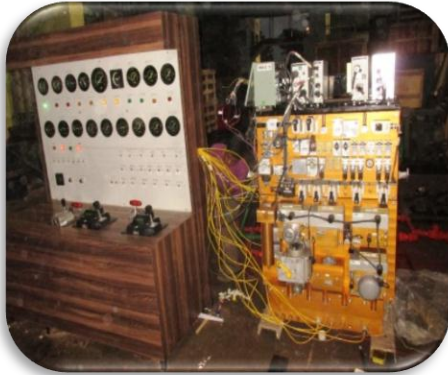
6.Installation of HD Visual Communication System:

Earlier (pre-COVID time) monthly Performance Review Meeting, different kind of technical discussions, seminars were usually held at HQ and different divisional units in turn wise. Officers and Supervisors gathered and discussed on agendas of particular meeting. But since end of March'20 due to the COVID-19 pandemic situation, gathering of people at any place is suspended. At this situation the concept of virtual meeting is introduced.

For participating in virtual meeting in regular basis, a HD Visual Communication System has been installed at conference hall of ELS/Santragachi. The entire system consists of One HD Visual Communication Unit, one HD Communication Camera, one Boundary Microphone and one 55" LED TV respectively. This system also can be connected with Laptop/PC via HDMI cable. So, in-house training, seminar can also be conducted with this system.

7. Developing CCB Testing Cum Training facility Test Set-Up:

ELS/SRC developed 02 nos. CCB Testing Cum Training facility Test Set-Up. One is for Centre of Excellence, Rourkela and another for its own. These test set ups are unique project / Test Bench in Indian Railway. In this project dry compressed air provided into CCB Pneumatic Panel. Arrangement have been made to display each output of Panel and also to provide any input required to panel for any operation.



8. Developing E70 Testing Cum Training facility Test Set-Up:

ELS/SRC has developed a set-up for "Testing cum Training facility for E70 Brake System with in-house facilities. It is a unique project / test set-up in Indian Railways. Moreover, training can be given as per operation of pneumatic system of live locomotive with this test set-up.



9. Air Flow Relay Test Set-Up:

An Air Flow Relay Test Set-Up (Make: Quadrant Measurements Pvt Ltd. Nashik, Model: QAFR-1) has been commissioned on



15.02.2020 at ELS/Santragachi. It is used for testing of air flow relays like QVRH, QVMT, QVSI & QVSL. Previously this facility was not available at ELS/Santragachi. In this facility parameters of pick-up and drop-out in mm WC is measured and data displayed and recorded through Laptop for further analysis. It will improve reliability of airflow relays.

10. Improve in stacking arrangement:

Insufficient space in shed floor is one of the constraints of ELS/SRC. For creation of additional space ELS/SRC has made improvement in stacking arrangement

