



डीजल शेड रतलाम



(An ISO 9001:2015, ISO-14001:2015, ISO-45001:2018,
ISO 50001:2011, 5S Certified Shed &
GREENCO GOLD RATED)

HISTORICAL PERSPECTIVE

Ratlam Diesel Shed is located on the main line on Mumbai-Delhi route. The shed started functioning on 1st May-1967 with an initial holding of 21 WDM2 locomotives. The shed has a rich tradition of excellent loco maintenance practices and has been adjudged the Best Diesel Shed of Western Railway for twelve years in the last fifteen years.

The shed has certifications for Quality Management system, Occupational Health & Safety and Environment control. The shed has taken the lead in use of renewable energy and conservation of water and power.

The shed has a Diesel Technical Training Centre for training of maintenance and running staff. Pre-promotional and refresher courses are conducted by this DTTC. Live monitoring through CCTV cameras, computerized animated training modules and well equipped model rooms are salient features of this Centre of Excellence.

During the last few years, Ratlam shed has taken huge strides in technical innovations, improving loco reliability as well as environment improvement and Industrial safety.

The Meter Gauge shed at DADN is also under the control of Ratlam Diesel shed. It is running passenger services on steep up gradients and has set high standards of locomotive maintenance.

Area of Diesel Shed, Ratlam	=	85,000 Square Meter
Covered Area	=	19,450 Square Meter
Uncovered or open Area	=	65,550 Square Meter

MECHANICAL (DIESEL)
RATLAM Shed Details

Date of commissioning	- 1.5.1967
Homing capacity	- 100 Locos
Fuel oil storage capacity	435 KL- IOCL
Lube oil storage capacity	140 KL – BPCL
Date of installation & capacity ETP- Incinerator	Date – 8.6.1999, Capacity 40,000 Ltr Per day Date- 22.8.2007 , Capacity 100 kg per hour

Organization (Gazetted)-

Ratlam diesel shed has following officers are posted at Diesel Shed Ratlam-

No.	Officer's Name	Designation.
1	Shri S.P. Gupta	Sr. DME (DL)
2	Shri Meghraj Tater	DME (DL)
3	Shri Himanshu Agrawal	AMM (DL)
4	Shri Dipak Ahirwar	Principal-DTTC
5	Shri Ajay Kumar	ACMT (DL)
6	Shri Manoj Kumar	ADME (DL)
7	Shri Amit Kumar Dhanware	ADME (DL)
8	Shri Kshitij Pandarkar	ADME(DL)

Loco Holding Ratlam Diesel Shed is having holding 73(DL)+66 (AC)=139 locos. Type wise brake up is given below-

WAG5H	WDM 3A	WDM3D	WDG3A	WDS 6	Inferior Service WDM2A /WDM3A (Including BA)	Total Holding
66	05	14	39 (GRS)	05	00	73(DL)+66(AC)= 139

The existing **Passenger Links** of the shed is **30 Locos** and **Freight Goods Outage Target is 53.50(AC Locos)**.

- **First AC loco No. 24464WAG5H received from Valsad AC shed on 09.08.2019 and after the schedule inaugurated by General Manager-WR on 16.09.2019 at Diesel shed, Ratlam for traffic service.**
- **First TOH schedule done of AC loco No.23292 WAG5H on 18.07.2020 at diesel shed RTM and awarded to cash by General Manager-WR**

Organization (Gazetted)-Mhow diesel shed

Mhow diesel shed has following officer posted-

1	Shri Shashikant Raut	ADME at DADN (Under the control of Sr.DME(C&W)RTM
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Achievements of Diesel Shed Ratlam

Wheel set, TM & Gear case assembly fixture:-

The entire assembly consists of wheel set, TM & Gear case to be assembled on fixture and then finally loaded on bogie frame. The shed does not have any fixture for assembling of these items and constrained to follow rudiment method for assembling, which is not accurate. Therefore shed has conceived an innovative method of assembling above components on this fixture duly developed in house with available resources as suitable fixture and photographed appended

1. This has saved valuable space in the section and also safe guards the wheel set assembly from damage.
2. This has also reduced the cumbersome process of assembling of TM & Gear case. Also it is safe and requires less time.

Cost of fabrication : Rs. 25000/- **In service from date :** 25.03.2020

Compressor (WAG5H) trail run test stand:-

Removal and installation of compressor is a tedious job. Before installing the compressor on AC locomotive, the proper working of the compressor is to be ensured to avoid extra work. For this purpose the QU-Compressor section has developed compressor trail run test stand to check the condition of the compressor before installing it on the locomotive. Thus saving man power and also improve the reliability of work. It costs around Rs. 25000/- for procurement of similar equipment from market, but QU-compressor has manufactured this test stand in house with available material.

Trail run test stand for all types of Truck for Diesel electric as well as AC locomotives:-

The trucks are overhauled during major schedules like M24, M48 and TOH sch (WAG5H) or out of course repair. Before providing in locomotive, the proper working of wheel set along with TM and also for any unusual sound/smoke are to be ensured to avoid extra work. For this purpose the QU-UF section has developed this trail run test stand in house to check the condition of the above items in truck before providing it in locomotive. Thus saving man power and also improve the reliability of work. It costs around 3 lakh for procurement of similar equipment from market, but QU-UF has manufactured this test stand in house with available condemned material.

Overhauling of PHGR (Graduator oil circulation and filtration pump)-

While doing schedule maintenance of electric locos (WAG5H), the cases of PHGR not working were found by Ratlam Shed Staff which was needed to replace with new /overhauled PHGR. The pump was not available as spare in RTM shed and also not available in other sheds to get in assistance. Thus RTM shed staff took initiative to overhaul PHGR. The pump was dismantled, overhauled, reassembled and tested successfully by RTM shed staff. The PHGR is a critical item of GR which must be in working on 6TH notch and above.

Modification of existing diesel loco speedometer test bench to make it compatible for testing of both diesel & electric loco speedometer (esmon):-

Ratlam diesel shed has started the schedule maintenance work of WAG5H locomotives equipped with energy cum speed monitoring system (ESMON), which is used to indicate locomotive speed, store speed data digitally and also calculate and store data regarding the amount of electricity consumed by locomotive from OHE. The ESMON has the following differences as compared to diesel loco speedometer:

ESMON	DIESEL SPEEDOMETER
51- Pin female D-type connector (for power supply, communication GR/DB feedback + Energy consumption + current & Voltage)	6 Pin – Power supply cable
9- Pin male D- type connector for signal cable.	5 Pin – Signal cable
14- pin pg used. SENSICON assy. is used.	3 Pin –communication cable
	4 Pin Energy + Current / Voltage Signal.
	10 Pin – PG used
	All connector that are used are round thread type

Due to above difference the shed was not able to test ESMON meter on the existing diesel loco SPM test bench.

The following modifications have been done by shed in the existing test bench to make it suitable for testing of ESMON as well :

I. Signal cable Modification:- In diesel loco 5 pin round threaded type connector is used but in ac tap changer locomotive 9-pin D- type male connector is used , for this a 9 pin D- type connector was modified with senscon connector for testing of 14- pin pulse generator.

II. Calibrator SS03 Modification:- For diesel loco speedometer calibration, M/s Medha make calibrator SSO3 having 5 pin round threaded type connector provided but in ac tap changer locomotive 9-pin D- type male connector signal cable is used . For this calibrator signal output modified from round connector to 9-pin D- type male connector with the help of junction box modification

III. GR(coasting) / DB (Dynamic Brake) Feedback Modification :- In ac tap changer locomotive ESMON there is a provision for **GR(coasting) / DB (dynamic brake) feedback** by which we can easily find out whether locomotive was working in motoring mode and when in dynamic mode. For this purpose modified test bench was modified with the help of 3 way toggle switch (on-off-on) accordingly.

TM Race Hydraulic Puller –

Diesel shed Ratlam had been given responsibility to perform maintenance schedules i.e. IA ,IB,IC and TOH of WAG5H type of AC locomotives since sep. 2019. In this connection, first TOH schedule of AC locomotive No. 23292 was planned by shed and Overhauling of TMs of this loco was undertaken by the QU-TM. Deflectors of these TMs were to be disassembled first for overhauling; however shed was not having standard equipment i.e. hydraulic puller as described in the CAMTECH hand book for this work. Then shed took initiative and successfully developed similar hydraulic puller in house by utilizing resources available in shed itself. This shed made Hydraulic puller has been successfully utilized to disassemble the deflectors of 6 Nos of TMs till now.

Sanitizing conveyer Room for passenger's luggage :-

In the guidance of DRM-RTM and Sr.DME(DSL)RTM a Sanitizing conveyer Room for sanitizing of passenger's luggage was made by QU Ancy. (DSL Shed RTM) from scrap materials of locomotives for passenger amenity and Installed at the entrance of Plate Form No.2 Ratlam Railway Station on 04.06.2020. This will help to prevent the spread of CORONA Virus by railway passenger's luggage.

Jet Sanitizing machine-

In terms of COVID-19, 01 no. of Mobile Pressurized Jet Sanitizing machine has been made by Diesel Shed RTM under guidance of Sh.Vineet Gupta-DRM-RTM and supervision of Sh. S.P.Gupta-Sr.DME(D)RTM for sanitizing to Railway Premises, Railway Colonies and Railway Offices and the sanitizing of the above places are being done by the diesel shed staff.

Sanitizer –

In terms of Novel Corona Virus (COVID-19), 9000 liters of SANITIZER is being prepared by Diesel shed Ratlam LAB upto till date according to WHO guidelines to use for diesel shed Staff and on demand by other department of RTM division for prevention from COVID-19. The above work is being continued under instruction of ADRM-RTM.

Hand Sanitizing equipments-

2 nos. of Paddle Operated sanitizer dispensing machine for Hand wash and 12 nos. of water & liquid soap dispensing machines have been made from scrap material available in Diesel Shed RTM. These equipments are installed at various locations of RTM division.

Oxygen Gas cylinder Trolley-

In terms of COVID-19, a Oxygen Gas cylinder Trolley has been made from scrap material by diesel shed staff for use of Medical Department of RTM division on 20.4.2020 which was also approved by Medical Department. In this regard the 120 nos. of same trolleys are under manufacturing in Diesel

OHE Isolation Training-

SSE /TRD/RTM visited diesel shed Ratlam to impart training regarding isolation of OHE to shed staff. During the training session, he first explained in detail about systematic methods to be adopted for isolation of OHE followed by practical demonstration. Available staff and supervisors (Total 37 Nos.) learnt the technique of safe isolation of OHE and also practically performed the task on their own

Modification done in stoning machine-

Modification was done in stoning machine to make it compatible to electric locomotive TM armature. Till date 25.08.2020 total 19 motor are re- assemble after overhauling work.

On-line training-

On-line training is conducted for Assistant Loco Pilot due for Refresher Course by the Diesel Traction Training Center, Ratlam as directed by the Railway Board. On-line. DTTC RTM is first training institute in WR to conduct on line training program for Running staff FROM 15.04.2020 through the Zoom App by the instructors of DTTC Ratlam.

Innovative Gadgets prepared by QU-TM/TG:-

Following small gadgets have been prepared in house by the Quality Unit TM/TG for ease in maintenance works :-

- A Working Table was required for overhauling of Auxiliary Machines. Same as per need has been developed by the section.
- For extraction and fitment of bearings of MVMT/MVSL/MVSI/MCP Machines during overhauling, a Puller cum Pusher gadget has been made in house by the section.
- A Test Bench having variable 3 Ø AC supply for testing of MVSI/MVSL machines has been developed.
- A spray gun for cleaning of auxiliary machines of AC locomotives has been developed in house, which saves time, man power and cleaning solvent utilization.
- A special bench for fitment of impeller of MVMT has been developed.
- A Rotor stand made for keep the rotors of Auxiliary machine during overhauling procedure.

Flagging off of loco No. 23292 by DRM RTM after TOH sch.-

Maintenance of conventional electric locomotives (WAG5H) has been commenced at Diesel shed Ratlam since Sep. 2019. After successful efforts in carrying out minor schedules IA, IB & IC, shed recently moved one step ahead and planned to perform major schedule i.e. TOH, which is to be undertaken after every 2 years, on electric loco No. 23292 WAG5H. The Shed has successfully completed TOH on this loco. This task which has been achieved by the shed after only 9 months of commencement of electric loco maintenance is a big milestone in history of the shed. To mark the occasion, shed arranged a small ceremony on date 18.07.20 in which DRM /RTM visited the shed. Shed officers, Supervisors and staff welcomed DRM on the occasion. He flagged off the loco no. 23292 WAG5H from the shed after TOH schedule for handing it over to traffic use. DRM congratulated shed team for the achievement and appreciated the good work being done by the shed regarding electric loco maintenance. He further advised shed staff to not to get discouraged from the small mistakes & obstructions and continue their efforts to achieve excellence in the work with special emphasis on the safety while at work.

TOH schedule of electric loco:

In line with heavy schedule maintenance of electric locos, TOH schedule maintenance of 23992 WAG5H has been done successfully. Loco has been shed out in multiple with loco no. 23465 WAG5H. So far TOH schedule of 2 electric locomotives have been done successfully by shed.

MVMT/ MVSL /MVSI/ MCP Assemble test stand-

MVMT/ MVSL/MVSI test stand has been made in house by the Quality Unit –TG of RTM shed. The test stand has been made by modifying the existing test stand of ECC. On this single test stand MVMT/ MVSL/MVSI/ MCP can be tested which also provides solution of space constraint in shed. 2 Nos. of MVMTs have been successfully tested on this test stand till 25.08.2020.

Angle measurement tool (Load switch)-

While carrying TOH/IOH schedule of electric locos, tap changer angle setting is to be done by load switch which was first time brought from DHD in assistance. Since Shed has planned target heavy schedule of electric locos which would always required load switch for angle setting. Shed staff took initiative and successfully made load switch in house. The price of this tool in the market is Rs. 85000. It has been prepared with the help of scrap material in the diesel shed Ratlam with an approx. price of Rs. 1200 /- only.

Test Bench For MPH- MPH Test Bench is developed in- house by TG section to use material available in shed. The overhauled MPH is mounted on this test bench for checking the following parameters:

1. Load (In Amperes)
2. Bearings Sound
3. Vibration
4. Oil Leakage at Various Joints
5. Build Pressure
6. Motor Temperatures

The price of this Test Bench in the market is Rs. 2, 50,000/-. It has been prepared with the help of scrap material in the diesel shed Ratlam with an approx. price of Rs. 50,000.

Test Bench For SMGR- A test bench to test overhauled SMGR is developed by the QU-FIP section by using material available in shed. The following parameters of SMGR can be checked on this test bench:

1. Pick up/ drop Current (in amperes)
2. Regression & progression time in seconds 9-13 sec
3. Vibration & sound
4. Air leakage at various components
5. Endurance test carried out
6. Lead angels

In September one “SMGR” has been TESTED successfully.

Panto Pan stacking stand –

At present there was no any arrangement for stacking of Panto pan in RTM Diesel shed. So Panto pans were lying on ground causes to damage of carbon strip & acquiring of more spaces in QU . A proper Panto pan stacking stand is made by RTM Diesel shed with available resources. Now all Panto pan are stacking on stand in a proper manner so that damaging & acquiring more space could be avoided.

Puller Assembly-

Diesel shed Ratlam have no resources to remove AC locomotive's compressor hub. A puller has been made by using scarp material available in the diesel shed. So far 02 hub of compressor have been successfully removed by using this puller. Due to which manpower and time saved and the quality of work has also improved.

Renovation of Tool room-

Main Tool Room of diesel shed RTM has been renovated by utilizing available resources of the shed itself . Major renovation works included repairing of dilapidated wooden furniture and provision of PVC sheet on the damaged flooring of the room.

Trolley-

A trolley has been made to take the bogie frame of the diesel shed Ratlam to the cleaning section. With the creation of this trolley, it has been possible to wash and clean the bogie frame with a pressure jet machine by taking to the cleaning section. This has helped in increasing the quality of maintenance of the bogie frame. Earlier this work had been done manually by wire brush and scraper in the under frame section, which could not get the desired cleanliness besides consuming more man power. Now with innovation of this trolley shed is in a position to save man power and time.

VCB overhauling (First time) –

Diesel shed Ratlam has done first time overhauling of Vacuum Circuit breaker (VCB) by making a new VCB manipulator from available resources at diesel shed RTM. VCB AOH Kit of Schneider make has been changed successfully in this overhauling.

Bevel Gear removal fixture-

There was no arrangement for the removal of bevel gear & key of SMGR in the diesel shed Ratlam. This work was done manually in the shed which used to take a long time and there was a risk of damage of Bevel Gears. SMGR unit in Diesel shed Ratlam built a Bevel Gear removal fixture from the resource available within the shed. Now it has become easy to change SMGR's Bevel Gear and the Gear Keys during IOH sch after making such fixture.

Facilities of Diesel Traction Training Centre, Ratlam

➤ Area of Training Centre 1082 sq. Meter

Capacity

a)	Conference Hall	40 trainees
b)	Room No. 1,2,3 & 6	25 Trainees / Room
c)	Room No. 4 & 5	30 Trainees / Room
	Total Capacity	200 Trainees / Room
	Total no. of Class room	6+1 Conference Hall

Other Facilities

1	Model room Alco and HHP Diesel Locomotive	1 No.
2	Model room AC Locomotive	1 No.
3	H type CB Coupler full working trolley model	1 No.
4	Library Technical and Hindi	1 No.
5	Class room equipped with computers	2 Nos.
6	Class room equipped with projectors	5 Nos.
7	CCTV recording equipped Examination Halls	7 Nos.
8	Laser B&W printers	1 No.
9	PA system	1 No.
10	White Boards	7 No.
11	Portable Mike	1 No.
12	Smart Board	1 No.

Hostel Accommodation

1	No. of rooms	27
2	Hostel capacity	100 trainees

Capacity Utilization of Training Center

Year	Cumulative capacity utilization of training center
2016-2017	119.36%
2017-2018	93.35%
2019-2020	137.62%
2020-2021 (Up to Nov)	265.79%

Training of Diesel shed staff under Project Saksham

Year	Total Regular Staff	Training done	Training due
2019-2020	663	663	0
2020-2021	RTM-645 & DADN-72	RTM-381 & DADN-44	RTM-264 & DADN-28

DIESEL SHED RATLAM OFFICERS AND STAFF CONTACT DETAILS

SN	Name	Designation	CUG No.	Railway
1.	Shri Sumant Prasad Gupta	Sr. DME (DL)	97524 92450	44550
2.	Shri Meghraj Tater	DME (DL)	97524 92451	44552
3.	Sh.Deepak Ahirwar	Principal- DTTC	9752492464	42259
4.	Shri Himanshu Agarwal	AMM (DL)	97524 92486	44992
5.	Shri Manoj Kumar	ADME (T)	9752492483	42251
6.	Shri Amit Kumar Dhanware	ADME (ML)	97524 92482	42253
7.	Shri Kshitij Pandarkar	ADME (MH)	97524 92480	42257
8.	Shri Ajay Kumar	ACMT(DL)	97524 92455	42256
9.	Shri Parmeshwar Gupta	SSE (G)	97524 92462	42259
10.	Shri Isak Merchant	SSE (M) Dsl/CTA	97524 92452	42262
11.	Shri Bimlesh Srivastav	SSE (M) HR	97524 92473	42280
12.	Shri Chander Shekhar	SSE (M) MP	97524 92490	42288
13.	Shri S K Jha	SSE (M) ML	97524 92481	42263
14.	Shri K L Verma	SSE (M) MH	97524 92461	42265
15.	Shri Asheesh Pipil	SSE (E) MIC	97524 92488	42270/44578
16.	Shri Bhagwan Singh	SSE(M)MIC	7869001966	42270/44578
17.	Sh. Rahul Kumar Soni	SSE(M)Tender	9752672060	42300
18.	Shri Harish Mishra	SSE (M) UF	97524 92474	42265
19.	Shri Prakash Kshirsagar	SSE (M) MW	97524 92489	42295
20.	Shri Rajendra Joshi	CI -DTTC	97524 92471	42286
21.	Shri Laxmi Narayan	SSE (E) EH	97524 92487	42260
22.	Shri Rishikesh Meena	SSE (E) EL	9827358380	42276
23.	Sh. Girish Bhatt	SSE (SG)	9826296660	42275
24.	Shri Raj Kumar	CLI (DL)	97524 92465	42278
25.	Shri R. K. Mahor	CLI (DL)	97524 92466	42278
26.	Sh. Arvind Tarnekar	CLI (DL)	9179321155	42278
27.	Diesel Shed RTM TNC	TNC-RTM	97524 92463	42296/44566
28.	Sh. Shashikant Raut	AME-MHOW	9752492407	83-340 / 330
29.	Sh. K.K.Kamal	SSE(G)-MHW	9752492477	