

# EASTERN RAILWAY

## WORK STUDY REPORT ON

Review of Staff Strength vis-a-vis Workload, pertaining to Body & Bogie  
Painting cum allied works of Electric Locomotives & EMU Motor Coaches at  
Kanchrapara Locomotive Workshop.

(STUDY NO.WSER-09/19-20)

Submitted on 24/07/2019

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## **ACKNOWLEDGEMENT**

The study team is thankful to CWM/ER/KPA, Dy. CEE/KPA, WPO/KPA for their kind co-operation while conducting the subject work study. The study team is also indebted to Sr. SEs & Office Supdts. of respective Shops & offices for their assistance in connection with furnishing of relevant documents, data, etc.

## **TERMS OF REFERENCE**

The subject work study is undertaken by GM's Efficiency Cell / Eastern Railway. The respective 'Terms of References' are as follows:

1. To assess the quantum of departmental Workload related to Painting cum allied works of Electric Locomotives & EMU Motor Coaches Body & Bogie at Kanchrapara Locomotive Workshop / E.Rly./ KPA.
2. To examine the deployment particulars of departmental Painter to cater the existing Painting & its related workload.
3. To analyze the participation of outside agency in Painting & Allied Jobs of Electric Locomotives & EMU Motor Coaches Body & Bogie at Kanchrapara Locomotive Workshop / E.Rly./ KPA.

## **METHODOLOGY ADOPTED**

The following methodology is adopted in course of carrying out the subject Work Study:

1. Collection of data pertaining to Painting workload from Shop Nos. 1 & 10 / KPA Loco Complex.
2. Discussion with relevant personnel under CWM / ER / KPA.
3. Study of existing Painting workload and deployment of departmental Staff to cater the same.
4. Study the effect of existing outsourced Painting works as well as onward proposals regarding the same.

### **SUMMARY OF RECOMMENDATION**

<b>Sl. No.</b>	<b>Recommendation</b>	<b>Para ref.</b>
<b>1.</b>	<b>Recommendation:</b> Study Team recommends that 06 nos. posts of 'Painter' of Shop No. 10 / Loco / Kanchrapara Workshop may be declared as surplus and surrendered accordingly, as against the present Sanctioned Strength of 15 posts.	<b>3.4.0.</b>

## **EXECUTIVE SUMMARY**

<b><i>Study Name &amp; No.</i></b>	Review of Staff Strength vis-a-vis Workload, pertaining to Body & Bogie Painting cum allied works of Electric Locomotives & EMU Motor Coaches at Kanchrapara Locomotive Workshop.  <b><i>(Study No. WSER-09/19-20)</i></b>
<b><i>Year of conducting the study:</i></b>	<b>2019-20</b>
<b><i>Terms of reference:</i></b>	<ul style="list-style-type: none"> <li>(i) To assess the quantum of departmental Workload related to Painting cum allied works of Electric Locomotives &amp; EMU Motor Coaches Body &amp; Bogie at Kanchrapara Locomotive Workshop / E.Rly./ KPA.</li> <li>(ii) To examine the deployment particulars of departmental Painter to cater the existing Painting &amp; its related workload.</li> <li>(iii) To analyze the participation of outside agency in Painting &amp; Allied Jobs of Electric Locomotives &amp; EMU Motor Coaches Body &amp; Bogie at Kanchrapara Locomotive Workshop / E.Rly./ KPA.</li> </ul>
<b><i>Methodology:</i></b>	<ul style="list-style-type: none"> <li>i) Collection of data pertaining to Painting workload from Shop Nos. 1 &amp; 10 / KPA Loco Complex.</li> <li>ii) Discussion with relevant personnel under CWM / ER / KPA.</li> <li>iii) Study of existing Painting workload and deployment of departmental Staff to cater the same.</li> <li>iv) Study the effect of existing outsourced Painting works as well as onward proposals regarding the same.</li> </ul>
<b><i>Sanctioned Strength:</i></b>	<b>15</b>
<b><i>Existing Men on Roll:</i></b>	<b>09</b>
<b><i>Vacant post:</i></b>	<b>06</b>
<b><i>Proposed Surrender:</i></b>	<b>06</b>

# **CHAPTER - I**

## **1.0.0. INTRODUCTION:**

**1.1.0.** Kanchrapara Workshop, being an ISO-9001: 2008 certified Organisation is engage with P.O.H. of Electric Loco & E.M.U. stock (Both Motor Coach & Trailer Coach), POH, NPOH & ROH of Non-AC Conventional Coaches of Eastern Railway

**1.2.0.** Kanchrapara Railway Workshop has 04 (Four) different unit/segment which are as follows-

- **Kanchrapara Locomotive Workshop :**

The Locomotive Workshop conducts POH of EMU Motor Coaches & Electric Locomotives. 11 Shops & Production Control Organisation (PCO) complies the said assigned job.

- **Kanchrapara C&W Workshop :**

The C&W Workshop conducts POH of EMU Trailer Coaches & Non-AC Conventional Coaches. 10 Shops & Production Control Organisation (PCO) complies the said assigned job.

- **Kanchrapara Stores Depot :**

This Stores Depot mainly feed the Elctrical Items for Electric Locomotive & EMU Motor Coach Periodic Overhauling (POH) work.

- **Halisahar Stores Depot :**

The Stores Depot mainly feed the Mechanical Items for Non-AC Conventional coaches & EMU Trailer Coaches Periodic Overhauling (POH) work.

**1.3.0.** To cope up with the changing scenario, Infrastructural Development is not the only requirement for manufacturing & periodical overhauling of various types of passenger coaches, Electric Locomotives but overall infrastructural development is also necessary in the whole Indian Railway system keeping in mind the minimum Environmental pollution in one hand and successful implementation of Clean India Mission on the other hand.

**1.4.0.** What's more, for any kind of development, money is the most important but limited resources. An organisation, like Indian Railway, may also provide a good financial support for its development, if good financial discipline can be practised and expenditure due to man, materials & overheads can be managed optimally & economically.

**1.5.0.** Indian Railway is facing tremendous financial crunch after implementation of 7<sup>th</sup> Pay Commission. Operating ratio is gradually increasing. Though Indian Railway is not a

business organization but to survive, it is always essential to make the organization in profit i.e. operating ratio should be less than 1(ONE). The year-wise Performance Efficiency Index of E. Rly. , as published in the corporate plan is tabulated below -

**Operating Ratio**

<b>Sl. No.</b>	<b>Financial Year</b>	<b>Operating Ratios</b>
1.	2014-15	177.27 %
2.	2015-16	180.56%
3.	2016-17	165.25%
4.	2017-18	181.15%
5.	2018-19	168.66% (Proposed)

**1.6.0.** In view of the above, Rly. Board issued nos. of circulars, orders, etc. time to time. The Zonal Railways also implement various measures for financial discipline.

**1.7.0.** The subject work-study has been undertaken with the objective to find out the way for minimising the running expenditure of the Workshop and thus improve the productivity index.

## **CHAPTER - II**

### **2.0.0. Existing Scenario:**

2.1.0. In Kanchrapara Locomotive Workshop Complex, there are shops directly under the Branch Officers of Mechanical & Electrical Departments. Different shops are entrusted specific activities pertaining to Periodic Overhauling (POH), NPOH etc. of different categories of Electric Locomotives & EMU Motor Coaches.

2.2.0. Study Team conducts Work study at Shop Nos. 1 & 10 of Kanchrapara Locomotive Workshop / E.Rly. /Kanchrapara. The salient points, in this respect, are -

- Separate Paint Section with pin pointed sanctioned staff strength exists in each of the above shops.
- Specific Incentive sanctioned strength for incentive booking of respective Paint Sections exist in each of the above shops.

### **2.3.0. Shop No. 1 /Loco / Kanchrapara :**

2.3.1. This is EMU Motor Coach Body Repair Shop. Body repairing work consists of Repair / Replacement of corroded / eroded components of Coach Body. Thus, basic concept of Body repair is to perform proper 'Corrosion Repair'. Painting is one of the most important operation of 'Corrosion Repair'.

2.3.2. In this Shop, there is one separate Paint Section which is functioning under SSE/Shop No. 1 (In-Charge). Painting is carried out during Body Repair of EMU Motor Coaches by said Paint Section.

2.3.3. Activities of Paint Section of Shop No. 1 is summarized below:

1. Cleaning, Scrapping and Painting of Roof including end wall.
2. Cleaning, Scrapping and Painting of all under frame equipment except electrical equipment.
3. Cleaning, Scrapping and Painting of Sole Bar, Cross Beam, Bolsters Trimmers, Trough floor (Bottom portion), Battery Box, Driving Cab ladder, etc.
4. Cleaning, Scrapping and under coat painting of total outside body.
5. Two coat putty (where necessary) on outside body.
6. Cleaning, Scrapping and Painting of Cattle Guard (In case of driving motor coach).
7. Rubbing of Putty portion and under coat painting of total outside body.
8. Outside body painting by finish coat.
9. Cleaning, Scrapping and under coat painting of total inside body.
10. Cleaning, Scrapping and two coat (one under coat & one finish coat) painting of entire ceiling of motor coach.



11. Cleaning, Scrapping and Painting of total Driving Cab including ceiling and floor.
12. Cleaning, Scrapping and Painting of total LT and HT including ceiling, floor and equipments.
13. Cleaning, Scrapping and Painting of seat frame and seat cum back rest.
14. Cleaning, Scrapping and Painting of Buffer and Bird guard net (In case of driving motor coach).
15. Cleaning, Scrapping and two coat (one under coat & one finish coat) painting of Sliding Door.
16. Cleaning, Scrapping and Painting of window.
17. Cleaning, Scrapping and Painting of floor patch, Outer & Inner.
18. Total lettering work (Inside & Outside) including stencilling of different symbols like physically handicapped, senior citizen, danger symbol, etc.
19. Front V and Zebra marking as per requirement of motor coaches.
20. Cleaning of total floor of the motor coach.

2.3.4. In course of discussion with SSEs/JEs of Shop No.1, it is learnt that outside agency is deputed for "Poly-urethane painting Top Coat of EMU/MEMU Coaches during POH at Kanchrapara Workshop.

2.3.5. The above work i.e. "Poly-urethane painting Top Coat of EMU/MEMU Coaches during POH at Kanchrapara Workshop. Qty. = 59 Nos. of Motor Coaches & 113 Nos. of Trailer Coaches." is outsourced to M/s. Emprise Marketing, B-1/31, Sector H, Aliganj, Lucknow-226024 (India), vide Letter of Acceptance No. EPD/W/CON/PU/TOP COAT/87/15-16, dated 28/04/2016 issued by Dy.CEE/P&D/KPA."

2.3.6. The Staff Position pertaining to 'Painter' at Shop No. 1 is conveyed vide WPO/ER/KPA's Office Letter No. PB/Misc./OS(P)/Pt.IV, dated 31/08/2018. Particulars of 'Painters' staff position is mentioned below - (Annexure -I)

Shop No.	Category	Grade	Sanctioned Strength	Men-On-Roll	Vacancy
SHOP - 1	Painter	Sr.Technician	08	08	NIL
		Technician-I	17	09	08
		Technician-II	NIL	03	-03
		Technician-III	02	06	-04
Total			27	26	01

2.3.7. The Paint Section of Shop No. 1 involves for Painting of EMU Motor Coach as per the scheduled Out-turn programme, fixed time to time by the competent authority. Departmental Painters are deputed in almost all EMU Motor Coaches to carry out necessary Painting Job except a few nos. of coaches which are painted with PU Paint by Outside Agency.

2.3.8. So far as the utilisation point of view of Departmental Painter, under mentioned points are noted by the study team

- i) Departmental Painters are utilised for Maximum nos. of coaches painting i.e. on an average 20 nos. of Coaches per month.
- ii) In case of PU Painting, only External painting of Coach body with respective PU paint is carried out by out-side contractual agencies. In that cases also, Departmental staff are involved in the under mentioned areas of Coach Body Painting -
  - a) Washing of Out-side Coach Body.
  - b) Touch-up painting with purple & white paint in the outside Coach Body.
  - c) Application of paint in Coach Interior with undercoat & finishing coat.
  - d) Application of paint in Both Driver & Guard end of Roof & Cattle Guard.
  - e) Application of paint on under frame components like Sole Bar, Bogie Bolster, Pipe Lines, Intercooler, Battery Box, Trough Floor, Cross beam, Trimmer, Air Reservoir, Schaku Coupler Housing, etc.

Besides the above, Surface preparation i.e. 'Scrapping', 'Cleaning', etc. Spray Painting & Painting with brush to be done by Departmental Painters.

#### 2.4.0. **Shop No. 10 /Loco / Kanchrapara :**

- 2.4.1. This shop is assigned the jobs pertaining to Bogie Maintenance of EMU Motor Coaches & Complete POH of Electric Locomotives.
- 2.4.2. This shop performs Maintenance of EMU Motor Coach Bogies. After completion of necessary rectifications / repairs of said Bogie components along with its fabricated structure, Paint Section of Shop No. 10 performs Painting work after necessary surface preparation.
- 2.4.3. On the other hand, Complete POH of Electric Locomotives is entrusted to the aforesaid shop.
- 2.4.4. The Staff Position pertaining to 'Painter' at Shop No. 10 is conveyed vide WPO/ER/KPA's Office Letter No. PB/Misc./OS(P)/Pt.IV, dated 31/08/2018. Particulars of 'Painters' staff position is tabulated below: (Annexure -I).

Shop No.	Category	Grade	Sanctioned Strength	Men-On-Roll	Vacancy
SHOP - 10	Painter	Sr.Technician	05	04	01
		Technician-I	10	02	08
		Technician-II	NIL	NIL	NIL
		Technician-III	NIL	03	-3
Total			15	09	06

2.4.5. Study Team noted that 06 nos. of Painters out of aforesaid 09 nos. On-Roll Painters of Shop No. 10 are being engaged in the under mentioned area of work -

- i) For Assembling of EMU Bogie Schaku Coupler.
- ii) For Assembling of EMU Spring Brake Gear.
- iii) Dismantling, Cleaning and Greasing of Axle Boxes.
- iv) Misc. Work on EMU Motor Coach bogies such as Cleaning, Painting, etc.
- iv) Cleaning of Colour Coat, etc. of 'Released Springs'.

2.4.6. The Rest 03 nos. of Painters out of aforesaid 09 nos. On-Roll Painters of Shop No. 10 are being engaged in the under mentioned area of work -

- i) Miscellaneous associated work for POH of Loco BA Panel, TK Panel, Air Duct and Traction Motor, etc.

2.5.0. Study Team, while visiting the Paint Section of Shop No. 10 and discussing with the respective SSE & SSE (In-Charge), noted that only 02 Painters are deputed for executing all kinds of Painting Job. The Rest On-Roll Painters are engaged to cater some other non-painting jobs of Shop No. 10, as stated above.

## **CHAPTER - III**

### **3.0.0. Critical Analysis :**

3.1.0. In ref. to paras 2.3.1. to 2.3.8., it is elaborately stated regarding the existing scenario of workload and deployment of departmental staff to cater the same. The significant & readily noticed points are as follows -

- i) SSE / JE of Paint Section/Shop No. 1 deputed Painters with helper to Work Points as per the Out-turn Programme of EMU Motor Coaches on regular basis.
- ii) SSE / JE of Paint Section/Shop No. 1 arranges to collect Paint, maintain the stock properly, distributed according to requirement and monitors the quality of Painting Works on regular basis.
- iii) As the Painting job is the 'Finishing Job' in nature, Artisan Staff (Painter) & Helper of Paint Section are to be kept available upto the last moment of EMU Motor Coaches Out-Turn.

*Considering the above, the present sanctioned strength of Paint Section of Shop No. 1 (Ref. Para. 2.3.6.) is justified in all respect.*

3.2.0. In connection to the above paras 2.4.0., 2.4.1. to 2.4.6. & 2.5.0., it is clearly stated regarding the system of deputing the departmental painters of Shop No. 10 in painting & other non-painting jobs.

3.3.0. The significant & readily noticed points regarding the deployment of departmental Painters of Shop No. 10 are as follows :

- i) Only 02 (Two) Painters are deputed for various Painting jobs.
- ii) Rest On Roll Painters are deputed in other associated jobs of Shop 10 which are not at all 'Painting' in nature.

During discussion with the respective personnel, it is learnt that the involvement of Painters in other jobs is necessary to cope up with the other associated work load of Shop No. 10.

*Considering the above, the present Men-on-Roll of 09 incumbents in the Paint Section of Shop No. 10 (Ref. Para. 2.4.4.) is justified.*

#### **3.4.0. Recommendation :**

Study Team recommends that 06 nos. posts of 'Painter' of Shop No. 10 / Loco / Kanchrapara Workshop may be declared as surplus and surrendered accordingly, as against the present Sanctioned Strength of 15 posts.

## CHAPTER - IV

### 4.0.0. FINANCIAL APPRAISAL

- 4.1.0. To evaluate the value of approximate minimum annual financial savings, the lowest pay band of Level- 1 vide 7th CPC Pay Matrix table is taken into consideration.

Department	Category	Level as per 7th CPC Pay Matrix.	Nos. of Posts	Pay Structure as per Level-1	Mean Pay as per Level-1	DA @ 12% of Mean Pay	Mean Pay as per Level-1 + DA for 01 Post	Monthly Savings against recommended surrender of 06 Posts	Total Annual Savings in Money Value against recommended surrender of 06 Posts
Figures In Rupees									
Electrical	Helper, pertaining to Level - 1	Level - 1	06	18,000 - 56,900	37,450.00	4494.00	41,944.00	2,51,664.00	30,19,968.00

- 4.2.0. As per recommendation made in Para – 3.4.0., **Minimum annual financial savings to be achieved** on account of surrender of 06 existing sanctioned posts of Painter Posts under **CWM/ER/KPA** is calculated as **Rs. 30,19,968.00 i.e 30.20 Lakhs** approximately.

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