



# **SOUTH EASTERN RAILWAY**

## **REVIEW OF STAFF STRENGTH VIS-À-VIS WORKLOAD AT THE ENGINEERING WORKSHOP/ SINI**



**EFFICIENCY CELL,  
(PLANNING & WORK STUDY),  
GARDEN REACH, KOLKATA – 700 043.**

**STUDY NO. EFF/915**

## SYNOPSIS

1)	Name of the work study	Review of Staff strength vis-à-vis workload at the Engineering Workshop at Sini.
2)	Terms of reference	The present targets set up by Rly. Bd., requirement of manpower equivalent to 0.5 EU/man/month, present workload, vacancies existing since last many years.
3)	Aim	To assess the exact requirement of staff in the changed scenario and as per extant yardsticks on the matter.
4)	Projected man power surplus/re-deployment	82 Vacant Posts
5)	Anticipated/projected savings	Rs. 239 lakhs per annum (approx).
6)	No. of recommendations made	03
7)	Critical analysis & observations	Rly. Bd has fixed the yardsticks at <b>0.5 Equated Units (EU) per man per month</b> and the same will be reviewed after modernization of workshop. The annual target is fixed by CBE. The target as well as the outturn varies every year. The average target considering last three years is <b>2260</b> and average production for the same period is <b>1750.77</b> EQT. To achieve this target <b>the requirement of manpower would be <math>188/0.5= 376</math></b> (excl Bridge deptt). Considering the present sanctioned and on roll strength of the workshop including Bridge deptt. it is proposed to surrender 82 vacant posts. Some activities viz. cleanliness and sanitary, transportation of small & bulky materials within the shop and around may also outsourced.
8)	Brief note on recommendations	<u>Rec – I</u> : The required manpower based on average monthly target of last 03 years and Board parameter of manpower (Para 6.3 above) of the workshop is 376. The present Sanctioned Strength (Excl Bridge Dept.) is 454. Considering the above <b>78 (454-376) no of vacant posts may be surrendered out right.</b> <u>Rec – II</u> : Considering reduced workload and less utilization of staff of Artisan Category in Bridge deptt. (Para: 5.2 above), the <b>04 (11-7) Vacant Posts of this category may also be surrendered without delay.</b> <u>Rec –III</u> : The Department may consider outsourcing of few activities as Para 6.6 above, before the new structural development as per UMBRELLA work has implemented. The staff involved at present for such activities may be utilized in more appropriate way.
9)	Department concerned	Engineering.

# **C O N T E N T S**

<b>Chapter</b>	<b>Description</b>	<b>Page No.</b>
I	Introduction	1
II	Cadre strength	2 - 3
III	Shop-wise Activities	4
IV	Shop performance vis-à-vis targets & Production	5 - 6
V	Workload vis – a – vis performance	7
VI	Critical analysis	8
VII	Recommendations	9
VIII	Financial Evaluation	10

## **CHAPTER - I**

### **1.0 INTRODUCTION**

The Civil Engineering Workshops manufacture and supply track components, bridge girders and various other items such as Platform Shelters, FOBs, Push/Motor trolleys, Lifting Barrier Gates, Gate locks, Glued Joints, Girders, etc. There are ten Civil Engineering Workshop in Indian Railways. In the initial stage, these workshops were set up for making the Railways self-dependent in the matters relating to requirement of Engineering structural items, rather than depending on out-agencies.

The Engineering Workshop located at Sini was set up during 1923 which is the one and only workshop catering to the requirements of Engineering department for fabrication of structural Engineering items in S.E.Rly. Presently this workshop is engaged in fabricating items of Civil Engineering works such as Welded Plate Girder, Welded Composite Girders, Passenger Platform Shelters, Foot Over Bridges, Switches & Built-up Crossings, Check Rails, Insulated Rail Glued Joints, Different P. Way items & Fittings for TT organization, FBWP, P.Way units and other departments.

The annual target for 2019-20 of this workshop is fixed at 2380 Eq. Tons. vide CBE/GRC's office O.O. No. CBE/WS/Fabrication/1177 dated 20.03.2019. The major product presently being manufactured is insulated glued rail joints. This workshop not only serves the purpose of S.E.Rly but also the adjoining Railways. Due to the trends for outsourcing the different activities considering the cost factor, the importance of this Workshop is gradually reducing. The unit cost of manufacturing Girders, glued joints etc., are on a higher side when compared to the cost of trade.

The workshop is headed by Dy.CE(WS)/Sini and assisted by AEN(WS)/Sini. The production is carried out under the supervision of various SSEs & JEs. APO(WS)/Sini, AMM/Sini & AFA(WS)/Sini look after the Establishment, Stores & Finance matters of Engineering Workshop/Sini & FBWP/JSG.

The study has been taken up to assess the actual requirement of staff at the Engineering Workshop/ Sini.

## **CHAPTER - II**

### **2.0 CADRE STRENGTH:**

2.1 The Engineering Workshop/Sini is headed by the Dy.CE(W/S)/ Sini and assisted by AEN (W/s), APO(W/s), AMM/Sini & AFA/Sini.

2.2 The Sanctioned and Actual cadre strength in the Engineering Workshop/ Sini under Dy.CE(WS)/Sini as on 01.01.2020 is as under :-

<b>1</b>	<b>SUPERVISORY CADRE</b>						
<b>Srl</b>	<b>CATEGORY</b>	<b>GRADE PAY</b>	<b>SANCT</b>	<b>ON ROLL</b>	<b>VACANCY</b>	<b>EXCESS</b>	<b>CONTROLLED BY</b>
1	SSE (WS)	L-7,8,9	30	19	11	0	WS HQ
2	JE (WS)	L-6	12	07	5	0	
3	SSE(DRG) WS	L-7	1	0	1	0	DRG HQ
4	JE (DRG)	L-6	0	1	0	1	
5	CH.MS (CMS)	L-7	1	1	0	0	KGP W/S
<b>Total</b>			<b>44</b>	<b>28</b>	<b>17</b>	<b>1</b>	

<b>2</b>	<b>WORKSHOP ARTISAN AND GROUP 'D' STAFF</b>						
<b>Srl</b>	<b>CATEGORY</b>	<b>GRADE PAY</b>	<b>SANCT</b>	<b>ON ROLL</b>	<b>VACANCY</b>	<b>EXCESS</b>	<b>CONTROLLED BY</b>
1	Sr.Technician	L-6	79	51	28	0	WS
2	Technician Gr.I	L-5	155	88	67	0	
3	Technician Gr.II	L-4	24	18	6	0	
4	Technician Gr.III	L-2	45	59	0	14	
5	Khalasi	L-1	47	62	0	15	
6	Safaiwala	L-1	7	6	1	0	
7	Bungalow Peon	L-1	1	0	1	0	
8	Trolleyman	L-1	1	0	1	0	
<b>Total</b>			<b>359</b>	<b>284</b>	<b>104</b>	<b>29</b>	

<b>WORKSHOP CANTEEN</b>							
<b>Srl</b>	<b>CATEGORY</b>	<b>GRADE PAY</b>	<b>SANCT</b>	<b>ON ROLL</b>	<b>VACANCY</b>	<b>EXCESS</b>	<b>CONTROLLED BY</b>
1	Bearer	L-1	4	4	0	0	WS
2	Asstt. Cook	L-1	1	1	0	0	
3	Wash Boy	L-1	1	0	1	0	
4	Safaiwala	L-1	1	1	0	0	
<b>Total</b>			<b>7</b>	<b>6</b>	<b>1</b>	<b>0</b>	

Ministerial Cadre (Personnel)							
Srl	CATEGORY	GRADE PAY	SANCT	ON ROLL	VACANCY	EXCESS	CONTROLLED BY
1	Ch. OS	L-7	1	1	0	0	DIVISION
2	OS	L-6	3	4	0	1	
3	Sr. Clerk	L-5	3	0	3	0	
4	Jr. Clerk	L-2	1	0	1	0	
5	PI / WI	L-6	1	0	1	0	
6	Peon	L-1	2	1	1	0	
<b>Total</b>			<b>11</b>	<b>6</b>	<b>6</b>	<b>1</b>	

Ministerial Cadre (Non-Personnel)							
Srl	CATEGORY	GRADE PAY	SANCT	ON ROLL	VACANCY	EXCESS	CONTROLLED BY
1	Ch. OS	L-7	0	1	0	1	DIVISION
2	OS	L-6	3	3	0	0	
3	Sr. Clerk	L-5	3	0	3	0	
4	Jr. Clerk	L-2	1	1	0	0	
<b>Total</b>			<b>7</b>	<b>5</b>	<b>3</b>	<b>1</b>	

Electrical							
Srl	CATEGORY	GRADE PAY	SANCT	ON ROLL	VACANCY	EXCESS	CONTROLLED BY
1	SSEE	L-7	1	1	0	0	DIVISION
2	JE	L-6	1	1	0	0	
3	Sr. Tech.	L-6	2	4	0	2	
4	Tech.I	L-5	3	5	0	2	
5	Tech.II	L-4	4	0	4	0	
6	Tech.III	L-2	5	4	1	0	
7	Group 'D'	L-1	10	6	4	0	
<b>Total</b>			<b>26</b>	<b>21</b>	<b>9</b>	<b>4</b>	

ARTISAN CADRE BRIDGE DEPT							
Srl	CATEGORY	GRADE PAY	SANCT	ON ROLL	VACANCY	EXCESS	CONTROLLED BY
1	Sr. Tech.	L-6	3	3	0	0	WS HQ
2	Tech.I	L-5	5	3	2	0	
3	Tech.II	L-4	2	1	1	0	
4	Tech.III	L-2	1	0	1	0	
<b>Total</b>			<b>11</b>	<b>7</b>	<b>4</b>	<b>0</b>	

**GRAND TOTAL**

	<b>Diff. Category</b>	<b>L : 7-1</b>	<b>465</b>	<b>357</b>	<b>144</b>	<b>36</b>	<b>Total vacancy108</b>
--	-----------------------	----------------	------------	------------	------------	-----------	-------------------------

### **CHAPTER – III**

#### **3.0 SHOP-WISE ACTIVITIES :**

3.1 The Principal Data of the Engineering Workshop/Sini is as follows :-

- 1) Area of the workshop -----11.128 Hectares
- 2) Covered area -----1.710 Hectares
- 3) Length of Railway siding -----7.380 Kms.
- 4) Annual Capacity ----- 2230 MT

3.2 **Description of Different Shops within Engg W/s, Sini vis-à-vis their capacity:**

Shop No	Shop Name	Items under taken	Capacity (MT)	
			Annual	Monthly
<b>1</b>	Foundry & Black Smithy	C.I. Casting & Forging Works	50	4.17
<b>2</b>	Machine Shop	Fittings of Switches, D/Xing, Dip Lorry, Push Trolley, Rail Dolley, Misc. items of FBWP/JSG & T.T. Orgn. (wear plates)	200	16.67
<b>3</b>	Jig & Tools			
<b>4</b>	Motor Shop	Supporting Shop		
<b>5B</b>	Girder Shop	Welded Composite Girder, Through Girder, R/Spans & other heavy structural works	600	50.00
<b>5C</b>	Bridge Shop	FOB, PPS, & Other light structures	180	15.00
<b>6</b>	Heavy Repair Shop (Millwright)			
<b>7</b>	Point & Crossing Shop	Switches 1 in 12 & 1 in 8.5 Build up X-ing etc	300	25.00
<b>8</b>	Yard Shop	Supporting Shop		
<b>9</b>	Electrical Repair Shop	Supporting Shop		
<b>10</b>	Planning Cell	Supporting Shop		
	PCO Cell	Inspection of Fabricated items		
<b>11</b>	Glued Joint	52 KG & 60 KG Rail	900	75.00
<b>Total</b>			<b>2230</b>	<b>185.83</b>

**CHAPTER - IV**

**4.0 Last 3 Years Production Target (in EQT) for the Engg. Work Shop/Sini**  
(By CBE/SER)

Sl	Description of the Item	2017-18	2018-19	2019-20
1	Open Web Girder	500	450	600
2	Revited Plate Girder			
3	Welded Plate Girder			
4	Welded composit Girder			
5	FOB & PPS	150	120	120
6	52 Kg & 60kg insulated rail glued joint	1100	800	1000
7	Switches	300	315	300
8	Other light structures like CC Crib/ EUR/ Rail Dolly etc	50	40	60
9	Misc. items of TT Orgn., FBWP/JSG, P-Way items & fittings	200	180	200
10	Foundry & Smithy	100	95	100
	<b>Total</b>	<b>2400</b>	<b>2000</b>	<b>2380</b>

**4.1 Month wise Target & Production in EQT for the current year i.e., 2019-20**  
(Till Dec'2019)

Month	Monthly Target (EQT)	Cumulative Target	Production	Cumulative Production
April	198.33	198.33	119.980	119.980
May	198.33	396.66	119.544	239.524
June	198.33	594.99	94.984	334.508
July	198.33	793.32	97.595	432.103
Aug	198.33	991.65	137.110	569.213
Sept	198.33	1189.98	143.395	712.608
Oct	198.33	1388.31	101.460	814.068
Nov	198.33	1586.64	105.496	919.564
Dec	198.33	<b>1784.97</b>	137.682	<b>1057.246</b>
Jan	198.33	1983.30		
Feb	198.33	2181.63		
March	198.33	<b>2380</b>		



4.2 **SHOP PERFORMANCE VIS-À-VIS TARGETS & PENDING WORKLOAD:**

4.3 The performance of the unit is as follows :

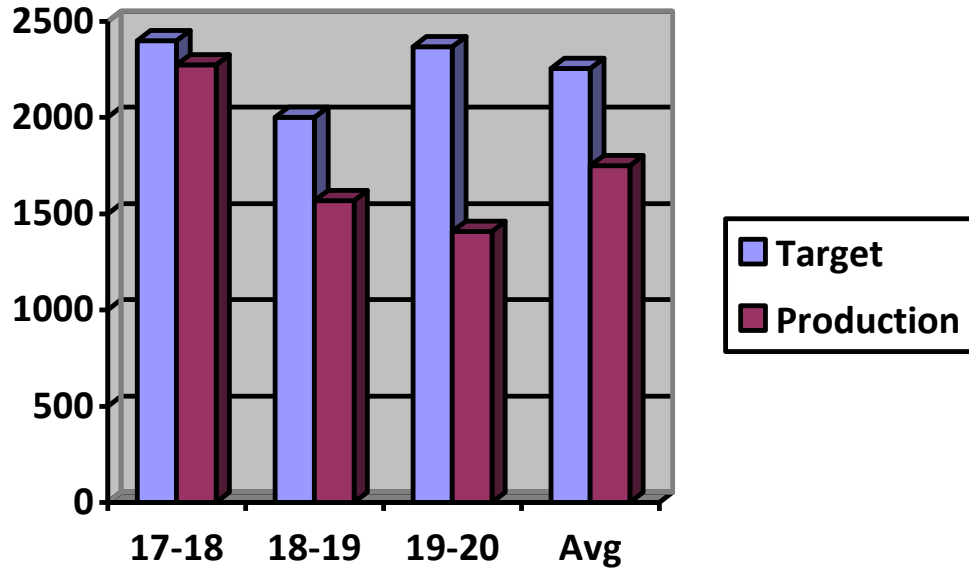
Sl. No.	Description of Items	Last Year Performance Total (Eq.Ton) (2018-19)	Yearly Targets for 2019-20 (Eq Ton)	PRODUCTION 2019-20 (till Oct'19)	DESPATCHES 2019-20 (till Oct'19)
				MT	Eq.Ton.
1)	<b>Girders</b>				
	(a) Open Web Girder	1.68	0.00	0.00	99.20
	(b) Relieving Girder	0.00	0.00	0.00	0.00
	(c) Welded Plate Girder	0.00	61.04	0.00	101.00
	d) Welded Composite Girder	339.89	538.06	255.184	296.92
	<b>TOTAL</b>	<b>341.57</b>	<b>600.00</b>	<b>255.184</b>	<b>497.12</b>
2)	<b>Other than Girders</b>				
	(a) Platform Shelter and FOB	123.80	120	64.250	32.00
	(b) Insulated Rail Glued Joints	480.25	1000	139.500	212.50
	(c) Switches & Check Rails etc.	313.42	300	160.740	146.00
	(d) Crossings	4.70		11.285	4.70
	(e) Other Light Structures like C.C.Cribs/ BFR modification/ Rail dolly etc.	45.02	60	20.980	0.00
	(f) Manufacturing of Misc. Items of T.T. Orgn., FBWP/JSG & other Deptt. and other P. Way items & fittings	177.22	200	116.835	135.90
	(f) Foundry & Smithy	81.54	100	45.294	62.93
	<b>TOTAL</b>	<b>1225.95</b>	<b>1780</b>	<b>558.884</b>	<b>594.03</b>
	<b>GRAND TOTAL</b>	<b>1567.52</b>	<b>2380.00</b>	<b>814.068</b>	<b>1091.15</b>
	P.I./Man/Month	0.56	0.89		

Total Staff on roll of the Shop (Excl  
Accounts, Store & Artisan of Bridge dept.) 350  
Total Staff involved directly in Production  
(Excl. Ministerial, Bidge & Canteen staff) 333

## CHAPTER - V

### **5 WORKLOAD VIS-À-VIS PERFORMANCE :**

#### **5.1 Target vis-à-vis achievement of the shop for last 03 years (in EQT) :**



Year	2017-18	2018-19	2019-20	Average Per Year
Target (EQT)	2400	2000	2380	2260
Production (EQT)	2275.13	1567.52	1057.25 Till Dec Expected 1409.66	1750.77

#### **5.2 BRIDGE DEPARTMENT (Other Activity) :**

11 Work Shop controlled Posts of Technician Category staff are sanctioned with 07 incumbents. These staff are utilized for rehabilitation work of bridge during emergency at any place (outdoor). Presently their deputation for that purpose is meager and are call for only when staff under BRI (Open Line) felt deficient with its own existing staff for tackling that breakdown or occurrence. In this situation, the existing incumbents of this category are utilized by the workshop administration for production and other activities as and when it is required.

#### **5.3 UMBRELLA WORK :**

5.4 Description: Modernization of Engineering Workshop for manufacturing of Girders at Shop No. 5B by providing additional shed of size 185m X 25m by the side of existing Girder shop. With estimated cost of Rs. 195000000/- is approved by PFA. This will increase the present capacity for Girder fabrication of 400 Ton to 2000 Ton with modern machine and capable staff.

## CHAPTER - VI

### 6 CRITICAL ANALYSIS

- 6.1 The Committee report on Holistic Review of Civil Engineering Workshops (Bridge workshops on Indian Railways) Vide RB No. 2015/CE-III/BR/Workshop Review Committee Report dated 23.03.2017 in para (iii) stated that the Existing Production capacity of the workshops to be fixed on sanctioned staff strength considering productivity of **0.5 Equated Units (EU) per man per month** and the same will be reviewed after modernization of workshop.
- 6.2 The committee report vide RB's letter of dated 23.07.2017 has several new instructions and changes in policy. In accordance with that the target vis-à-vis production has been considered in this study w.e.f. FY 2017-18 and onwards.
- 6.3 The production target (in EQT) of Engg. Work shop is prepared by the workshop which is further modified in the zonal office and finally fixed by CBE. The target varies time to time; similarly the outturn is also differing in every year. The average target of the Equated Tonnage per year considering last three years (i.e., 2017-18, 2018-19 & 2019-20) fixed target is **2260**  $\{(2400+2000+2380)/3\}$  and average production for the same period is **1750.77** EQT.
- 6.4 Thus Monthly average target is  $2260/12 = 188$  **EQT** and average production is  $1750.77/12 = 145.89$  EQT  
Considering the last 3 years average monthly target of production for the workshop and taking Board's Benchmark of 0.5 EU per man per month, **the requirement of manpower would be  $188/0.5 = 376$ .**
- 6.5 The present on roll strength of the workshop is 350 against 454 sanctioned posts (excluding Artisan Cadre of Bridge Dept.).
- 6.6 The on roll strength in Artisan Cadre of Bridge Dept. is 7 against 11 sanctioned posts. The workload of this wing has reduced.
- 6.7 There is scope of outsourcing of few activities viz. cleanliness and sanitary, transportation of small & bulky materials within the shop and around as required. The production of platform shelters may also outsourced since it's required lots of hassle in transportation of the semi finished material and further assembling at the required place.
- 6.8 The Accounts and Stores portion has not included in the study as they perform activities concerning to FBWP/JSG & TTM Orgn. In addition to the Engg. Work Shop /Sini.

## **CHAPTER - VII**

### **7 RECOMMENDATIONS :**

- 7.1 **Recommendation – I** : The required manpower based on average monthly target of last 03 years and Board parameter of manpower (Para 6.3 above) of the workshop is 376. The present Sanctioned Strength (Excl Bridge Dept.) is 454. Considering the above 78 (454-376) no of vacant posts may be surrendered out right.
- 7.2 **Recommendation – II** : Considering reduced workload and less utilization of staff of Artisan Category in Bridge deptt. (Para: 5.2 above), the 04 (11-7) Vacant Posts of this category may also be surrendered without delay.
- 7.3 **Recommendation – III** : The Department may consider outsourcing of few activities as Para 6.6 above, before the new structural development as per UMBRELLA work has implemented. The staff involved at present for such activities may be utilized in appropriate way.

## CHAPTER - VIII

## 8 FINANCIAL EVALUATION

In reference to the recommendations made in the study report the financial evaluation against 82 posts is as under:-

SURRENDER/REDEPLOYMENT OF 82 Posts								
Srl No.	Desgn	Scale of pay	No. of posts	Level	Mean Pay (18000+23500/2) (Level-1)	DA @ 17 %	Monthly cost per staff	Total Cost Per Month
1	Min. Level	18000-23500	82	L-1	20,750	3,528	24,278	1990796
TOTAL			82					19,90,796

The annual savings against **82** posts = 1990796 x12  
= **Rs. 238,89,452/-**  
Say **Rs. 239 lakhs per annum**

&lt;&lt;&lt;&gt;&gt;&gt;