

भारत सरकार / GOVERNMENT OF INDIA रेल मंत्रालय / Ministry of Railways दक्षिण रेलवे / Southern Railway

प्रधानकार्यालय/ Headquarters Office, Planning Branch, चेन्ने - 600 003/Chennai - 600 003.

Dated: 14.12.2020.

No.G.275/WSSR-112021/2020-21

CWM / LW / PER

Sub: Work study to review the Staff Strength at Mechanical Mill Wright Shop / LW / PER.

Ref: SDGM's D.O. letter No.G.275/Annual Prog./2020-21 dated 13.07.2020.

A work study on the above subject was conducted by Headquarters Planning Branch and a report on the same is attached.

As the report is to be finalized within eight weeks, it is requested to take expeditious action and advise this office in this regard.

A copy of the work study report may be given to organized labour.

This has the approval of SDGM.

(D. JAYARAMAN) Dy. Chief Planning Officer for Senior Deputy General Manager.

Copy to: PCME/MAS (Encl: One copy of the study report) The Director (E&R)/Rly.Bd/NDLS for information. (e - copy of the study report)



SOUTHERN RAILWAY

PLANNING BRANCH

G. 275 / WSSR-112021-2020-21

WORK STUDY TO REVIEW THE STAFF STRENGTH OF MILL WRIGHT SHOP LOCO WORKS /PERAMBUR

STUDIED BY

OF
PLANNING BRANCH

DECEMBER 2020

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ACKNOWLEDGEMENT

The work study team acknowledges the valuable guidance and various data given by the WM/D/LW Co-ordinating Officer, SSE/MW/LW Co-ordinating Supervisor as well as other supervisors and staff who had helped to undertake this study.

(ii)

AUTHORITY

Annual study programme approved by SDGM for the year 2020-21

(iii)

TERMS OF REFERENCE

To review the staff strength of Mechanical Mill Wright Shop in Loco Workshop – Perambur

(iv)

METHODOLOGY

- 1) Collection of data.
- 2) Observation of present system of working.
- 3) Interaction with officers, supervisors and workers.
- 4) Analysing of the output and maintenance charges with economics involved.
- 5) Identifying areas of duplication, unwarranted procedures and possibilities of multi skilling.

(v)

SUMMARY OF RECOMMENDATIONS

The following **30 vacant posts** are found excess to the requirement the same may be surrendered and credited to the Vacancy Bank.

SI.	Category	Sanction	Actual	Requirement	Surplus
No.					
1	SSE	13	09	09	04
2	JE 04 01 0		04	-	
3	Sr. Tech	30	27	27	03
3	Tech-I	58	41	41	17
4	Tech-II	08	04	04	04
5 Tech-III		07	- 05		02
	Total	120	82	90	30

TOTAL 30 POSTS

Introduction

The first major workshop started at Perambur in the year 1856 for the combined activity of overhauling steam locomotive, carriage and wagons. Subsequently workshops were established at Trichirapalli and Mysore

History of Perambur Workshops

The Perambur Workshop is the oldest Mechanical Workshop in the Southern Railway system, was established by the erstwhile Madras Railway Company in the year 1856. Almost simultaneously with the opening of their first line from Royapuram to Walajah Road. This workshop was established for the combined activity of overhauling steam locomotive, carriage and wagons up to 1932, this was the Central Workshop for the maintenance of rolling stock.

Due to the increase in the fleet strength of locomotives, coaches and wagons, it was felt necessary to have a separate workshop for Steam locomotives.

The twin workshops were bifurcated in the year 1932. Loco Works was established exclusively for Periodical Overhauling (POH) Steam Locomotives and Travelling Steam Cranes of Madras and Southern Mahratta Railway. In the heyday of steam traction, this workshop was the premier and most modern workshop among the Indian Railway Workshops overhauling steam locomotives

The turbulent and testing time the Exit of Steam Locomotives in the year 1983 was the most difficult year for all the Steam Loco lovers of this Workshop. The workshop had to diversify to various new activities. The employees were sent to different workshops and divisions for getting trained in POH of AC Locomotives and Coaches. This apart, the available welding skill was utilized to manufacture UIC bogies. It was a period of turbulence for the staff and the supervisors who had to absorb the new technologies late in their middle age. Loco Works started taking coaches for heavy corrosion works in the Erecting shop in addition to undertaking POH of coaches also. Simultaneously the erstwhile boiler shop was modified to take over POH of AC Locos. The POH of diesel shunters was also started and thus there was a radical

transformation from "210 psi to 25 KV" and "boilers to power packs". This has been made possible by the skill commitment and dedication shown by the staff, supervisors and the officers. The workshop has had a congenial industrial atmosphere thanks to progressive trade unions and associations.

Changing with time: With the rapid technological changes taking place over Indian Railways, the Loco Works also adapted itself to the changing requirements. Today this has blossomed into an ISO 9001: 2000 & ISO 14001 certified Workshop. This is one of the composite workshops undertaking POH of Electric Locos, Diesel Shunting Locos, Coaches, Diesel Electric Multiple Units and Self Propelled ARTs. This workshop has also carved a niche for itself by successfully manufacturing ICF and EMU bogies and Elastic Rail Clips. The role played by Loco Works in production of bio-diesel (pilot plant) is unique. 2007-2008 was platinum jubilee for Loco Works Perambur. Total area of Loco Works is 2,16,833 sq. mtrs. and covered area is 57,876 sq.mtrs. The present staff strength is around 1880. It is also housing the Material Technology Centre of Southern Railway.

Electric Loco POH

POH of Electric locomotives was started in 1985.

Diesel Loco POH

DIESEL Shunting Loco POH was started in 1985.

DEMU POH

Overhauling of Driving Power Car of DEMU was started in 1999.

Coach POH

Passenger Coach POH - cum corrosion repairs of coaches was started in 1981.

Bogie-Manufacturing

ICF Bogie of capacity of 13T and 16T, EMU Bogie, Bogie Trailer Coach.

• Bio-Diesel Production

Production of Bio-Diesel was started during 2004.

ERC

Manufacture of Elastic Rail Clips (ERC) for Rail Track maintenance was started in 2000.

PRESENT SCENARIO

Mechanical Mill Wright (MMW)

MMW is a specialized wing in Loco Workshop to attend the machines during their failures and certain specialized maintenance activities. That is by preventive and break down maintenance and provision of alternate machines. The Electrical mill wright is a separate wing to attend the electrical part of the machines. At times, these activities are attended in tandem. Most of the shops have separate section of MMW staff earmarked even though they are also coming under the MMW section broadly. This is under the control of Production Engineer (PE) and an SSE/MMW is in overall in-charge. A set of SEs and JEs are available to assist him who are incharge of important shops / activities.

Central Manufacturing Section

Manufacturing of components required for maintenance such as gears, crane axles, bearing housing, power screws, jaw screws, clutch plates, etc.,

Machine Maintenance Section

- ➤ Maintenance of EOT cranes, Machinery & Plants.
- ➤ Tensile testing of Screw coupling assembly, BSS, Brake Beam, Chains and Wire rope slings.
- Overhauling of Whiting jacks, etc.

SI No	Section	Nature of work						
1	RO & ETP	1. Operation of 6 Nos. of RO plant and its daily maintenance.						
		2.Maintenance and operation of ETP & STP feed pump						
2	CMS	Manufacturing of shaft, gears and other spares used for Machines,						
		EOT cranes, compressors etc.,						
3	M&PR	Maintenance of machines at AC Loco, M&PR, and Bogie repairs (POH)						
		shop. Maintenance of compressors and grinding machines.						
4	EOTC	Maintenance of 38 Nos. of EOT crane and 3 Nos. Jib cranes, 2 Nos. of						
		Traversers, 16 Nos. of Hoist.						
		Maintenance of wire ropes of 3 Nos. of BD cranes.						
5	Chain Testing	1. Screw coupling load testing works						
		2. Draw hook and Draw bar load testing works.						
		3. Screw coupling assembly load testing work.						

		4. Baby coupler load testing work.					
		5. BSS hanger load testing work. (POH, IOH)					
		5. Shell SSE/40/ICF – Chains load testing work.					
		7. SSE/CR and WR/CW/PER chains load testing work.					
		8. New and old wire rope load testing.					
		9. Visual examination.					
		10. SSE/RT/CW, SSE/MW/CW, SSE/80 (furnishing) /ICF - chain					
		load testing work.					
		11. PGT Divn. SA Divn, MAS Divn, - lifting tackle load testing work.					
		12. LW – chain, wire ropes, lifting tackle, D'shackle					
		13. Load testing works-SSE/EMU/AVD-Chains and wire ropes					
6	Whiting jacks	Maintenance of 192 Nos. of Whiting jacks at 23 locations.					
7	WT	WT section					
		Maintenance of Machineries and Plant at WT shop, Programming of					
		CNC machines at various shops.					
		Maintenance of CNC machines at LW.					
		Maintenance of Drive and PLC's based machines					
8	Fabrication &	Maintenance of machines at Fabrication shop and spring section.					
	Spring	Overhauling of earthing devices.					
		Maintenance of Circulars saws					
9	Development	Fabrication of jig's and fixtures as per the requirements of user shop.					
		Ex. Fabrication of trestles, Pipe bending machines					
		Primary and secondary Fiat bogie springs.					

The staff strength of MMW / LW (sanction from WPO statement and actual as per SSE statement) AS ON 06-08-2020 $\,$

SI. No	CATEGORY	SANCTION	ACTUAL	VACANCY	Excess
1	SSE	13	09	04	-
2	JE	04	01	03	-
3	MWM - Sr.Tech	30	26	04	-
4	MWM – TECH I	58	41	17	
5	MWM – TECH II	80	04	04	-
6	MWM – TECH III	07	00	07	-
7	Helper	00	00	00	-
8	Crane Driver	00	02	00	02
9	Sr.tech. Brick layer	00	01	00	01
	TOTAL	120	84	36	02

CONSOLIDATED STAFF STRENGTH

MW ARTIZAN Crane Driver		74
Gen.Welder		2
total		78
เบเสเ		70
LESS		
CR	3	
DEATH-	1	
CWM/O	1	
DEMO	1	
CD wkg GW	2	
LTO	1	
LIO		
CMT	1	
	1	68
CMT	1	68
CMT Physical tota	1	68
CMT Physical tota 55+	1 16 2 0	68
CMT Physical tota 55+ COMB-	16 2 0 0	68
CMT Physical tota 55+ COMB- PH -	1 16 2 0	68
CMT Physical tota 55+ COMB- PH - P.WOMEN -	16 2 0 0	68
CMT Physical tota 55+ COMB- PH - P.WOMEN - CONZ	1 16 2 0 0	68

The sanctioned strength of MMW/LW is 120 as on 01.07.2020and the actual strength is 84 leaving 36 vacancies.

MW Total Strength- GL – 74 Crane driver (GL 2125, 2741) - 2	76
(ADD) Other shop staff working in MW (GW-12129, 14369) JE/Y working at Yard shop Y 2300	3
Grand Total	79
LESS MW staff working at other shop/death GL 24065,24193,24235, working at CR shop (3) GL 23991 working at CWM/O (1) GL 2341 transfer to WT shop/wkg at LTO (1) GL 1272 Death on 03/05/2020 (1) GL 2125, 2741 – Crane drivers wkg at GW shop (2) GL 2964 booked OT @ DEMO (1)	9
Staff to be booked for Incentive	70

Staff Booked for Incentive						
GL staff	ļ	\DD***	Total			
	(Other shop staff working in MW	staff			
			booked			
67		3	70			

2.10 Control of staff in various locations:

9 SSEs and 1 JE are controlling the MMW staff in various shops or activities.

2.11 Shops/Area maintained by MMW

- 1. CR Shop
- 2. AC Loco Shop
- 3. Wheel & Tyre Shop
- 4. BR Shop
- 5. GW Shop
- 6. CMT
- 7. Tool Room
- 8. Yard Shop
- 9. R.O. Plants
- 10. DEMU Shop

2.11 FAILURE HOURS

Failure /maintenance details

SI.	Month	Total No. Of Break downs			Brea	Break down Hours			Preventive Maintenance Hrs		
No	WOITH	2017- 18	2018- 19	2019- 20	2017- 18	2018- 19	2019- 20	2017-18	2018-19	2019-20	
1	April	7	13	3	724	557	095	5056	6544	6726	
2	May	16	5	3	1169	255	246	5512	6670	6876	
3	June	12	5	1	723	412	187	5888	7496	5312	
4	July	3	6	5	356	470	397	5980	6440	7806	
5	August	8	4	8	340	73	504	6672	6504	7572	
6	September	7	7	5	728	316	445	5904	7264	6936	
7	October	4	8	8	238	606	743	6480	6104	7525	
8	November	13	6	6	696	443	684	6328	6813	7866	
9	December	9	4	5	506	385	513	9616	10764	11072	
10	January	3	4	10	307	224	893	4992	5412	5712	
11	February	2	4	11	92	160	1032	6489	5778	7060	
12	March	7	2	8	107	87	708	7212	6459	7335	
	TOTAL	91	68	73	5986	3988	6447	76129	82248	87798	
	erage per month	8	6	7	500	333	538	6345	6854	7317	
Ave	erage per day	1	1	1	17	11	18	211	230	245	

2.12 staff booking in gangs.

SI.No	Section	Nature of work	No. of staff
1	RO & ETP	Operation of 6 Nos. of RO plants and its daily maintenance. 2. Maintenance and operation of ETP & STP feed pump	6
2	CMS	Manufacturing of shaft, gears and other spares used for Machines, EOT cranes, compressors etc.,	5
3	M&PR	Maintenance of machines at AC Loco, M&PR, Bogie repairs (POH) shop. Maintenance of compressors and grinding machines.	7
4	EOTC	Maintenance of 38 Nos. of EOT crane and 3 Nos. Jib cranes, 2 Nos. of Traversers, 16 Nos. of Hoist. Maintenance of wire ropes of 3 Nos. of BD cranes.	20
5	Chain Testing	 Screw coupling load testing works Draw hook load testing works. Draw bar load testing works. Screw coupling assembly load testing work. Baby coupler load testing work. BSS hanger load testing work.(POH, IOH) Shell SSE/40/ICF – Chains load testing work. SSE/CR/CW/PER chains load testing work. SSE/WR/CW/PER chains load testing work. New and old wire rope load testing. Visual examination. SSE/RT/CW, SSE/MW/CW, SSE/80 (furnishing) CF – chain load testing work. PGT Divn. SA Divn, MAS Divn, - lifting tackle load testing work. LW – chain, wire ropes, lifting tackle, D'shackle Load testing works-SSE/EMU/AVD-Chains and wire ropes 	5
6	Whiting jacks	Maintenance of 192 Nos. of Whiting jacks at 23 locations.	6
7	WT	WT section 1. Maintenance of Machineries and Plant at WT shop, Programming of CNC machines at various shops. 2. Maintenance of CNC machines at LW. 3. Maintenance of Drive and PLC's based machines	8
8	Fabrication & Spring	 Maintenance of machines at Fabrication shop and spring section. Overhauling of earthing devices. Maintenance of Circulars saws 	5
9	Development	 Fabrication of jig's and fixtures as per the requirements of user shop. Ex. Fabrication of trustles, Pipe bending machines Primary and secondary Fiat bogie springs. 	7
		Total	69

Incentive

As per SSE/MMW/LW incentive is allowed for 78 staff on par with the respective shop employees where they are allotted.

2.13 Overtime:

The overtime payment is made to MMW staff on three counts namely.

- 1. Factory OT when the total hours is above 47 ½ hrs.
- 2. NOT when the OTA hours is within statutory limits.
- 3. On line OT When working at outstation.

Normally this is paid to the staff who are not given incentive applicable to shop staff which is roughly about 50% of the total staff. The on line OTA is paid for the duties of outstation like ERS, KCVC, NCJ, TN, MVN, MDU, TPJ etc.

2.14 The duty roster

Morning - 7:00 - 11.30 hours Evening - 12.30 - 16.30 hours Saturday - 7:00 - 12.00 hours

3.0 CRITICAL ANALYSIS:

The study of Mill Wright staff to arrive at a right size is very complex due to the following reasons.

- 1. There is no direct relationship between the quantum of production or product value with the number of MMW staff.
- The age profile of the machines and codal life has got a bearing on the MMW attendance and an in-house analysis of this aspect is not available.
 Very often this is not linear and the old machines are more maintenance free in many cases.
- 3. The frequency of utilization and maintenance requirements are not tabulated in a purposeful way.
- 4. No direct proportion of MMW staff and shop staff is prescribed even on a macro basis.
- 5. There are no prescribed yardsticks or benchmarks separately for MMW staff.
- 6. The demarcation of activities between MMW and EMW wings are very vague.
- 7. The shop wise distribution of majority of MMW staff is neither scientific nor updated.
- 8. The division between incentive paid staff and OTA paid staff is not rational.
- 9. The quantum or value of outstation duties is not evaluated
- 10. The problem on account of lack of spare parts or tools or materials by MMW staff is not evaluated.
- 11. The value of products/services are not compared with market value/import cost.

Due to the above factors, the work study has to rely upon some macro figures in which there is bound to be some marginal deviations in the assessment of staff for some activities.

But in such case, some allowance is given liberally in order to avoid any practical difficulties or shortages.

Staff working in gangs for preventive maintenance and break down maintenance

SI.No	Section	Nature of work	No. of staff
1	RO & ETP	Operation of 6 Nos. of RO plants and its daily maintenance. 2. Maintenance and operation of ETP & STP feed pump	6
2	CMS	Manufacturing of shaft, gears and other spares used for Machines, EOT cranes, compressors etc.,	5
3	M&PR	Maintenance of machines at AC Loco, M&PR, Bogie repairs (POH) shop. Maintenance of compressors and grinding machines.	7
4	EOTC	Maintenance of 38 Nos. of EOT crane and 3 Nos. Jib cranes, 2 Nos. of Traversers, 16 Nos. of Hoist. Maintenance of wire ropes of 3 Nos. of BD cranes.	20
5	Chain Testing	 Screw coupling load testing works Draw hook load testing works. Draw bar load testing works. Screw coupling assembly load testing work. Baby coupler load testing work. BSS hanger load testing work.(POH, IOH) Shell SSE/40/ICF – Chains load testing work. SSE/CR/CW/PER chains load testing work. SSE/WR/CW/PER chains load testing work. New and old wire rope load testing. Visual examination. SSE/RT/CW, SSE/MW/CW, SSE/80 (furnishing) /ICF – chain load testing work. PGT Divn. SA Divn, MAS Divn, - lifting tackle load testing LW – chain, wire ropes, lifting tackle, D'shackle 	5
6	Whiting jacks	15. Load testing works-SSE/EMU/AVD-Chains and wire ropes Maintenance of 192 Nos. of Whiting jacks at 23 locations.	6
7	WT	 Maintenance of Machineries and Plant at WT shop, Programming of CNC machines at various shops. Maintenance of CNC machines at LW. Maintenance of Drive and PLC's based machines 	8
8	Fabrication & Spring	Maintenance of machines at Fabrication shop and spring section. Overhauling of earthing devices. Maintenance of Circulars saws	5
9	Development	Fabrication of jig's and fixtures as per the requirements of user shop. Ex. Fabrication of trustles, Pipe bending machines Primary and secondary Fiat bogie springs.	7
		Total	69

3.1 Failure / maintenance statistics.

SI.	Month	Total No. Of Break down			Brea	Break down Hours			Preventive Maintenance Hrs.		
No	Worth	2017- 18	2018- 19	2019- 20	2017- 18	2018- 19	2019- 20	2017-18	2018-19	2019-20	
1	April	7	13	3	724	557	095	5056	6544	6726	
2	May	16	5	3	1169	255	246	5512	6670	6876	
3	June	12	5	1	723	412	187	5888	7496	5312	
4	July	3	6	5	356	470	397	5980	6440	7806	
5	August	8	4	8	340	73	504	6672	6504	7572	
6	September	7	7	5	728	316	445	5904	7264	6936	
7	October	4	8	8	238	606	743	6480	6104	7525	
8	November	13	6	6	696	443	684	6328	6813	7866	
9	December	9	4	5	506	385	513	9616	10764	11072	
10	January	3	4	10	307	224	893	4992	5412	5712	
11	February	2	4	11	92	160	1032	6489	5778	7060	
12	March	7	2	8	107	87	708	7212	6459	7335	
TOTAL		91	68	73	5986	3988	6447	76129	82248	87798	
	erage per month	8	6	7	500	333	538	6345	6854	7317	
Ave	erage per day	1	1	1	17	11	18	211	230	245	

In consideration of the failure statistics for the past 3 years i.e. from Apr'2017 to Mar'2020, the No. of failures is drastically reduced due to effective maintenance of the assets.

The no. of break down Hours is also in wavering and found little increase.

The preventive maintenance hours is slightly increased in the recent years. The average preventive maintenance hour per day is 232 hours.

If we consider 8 hrs per day it comes around **29 staff per day** is required for maintenance.

For breakdown maintenance, the no. of breakdown is very minimum of one only and the breakdown hours also meager to the value of 16 hours per day. Hence **3 staff** is sufficient for breakdown maintenance.

Stores

One sub store is maintained at MMW shop to store /Procure of materials, tools and plants. This store indents the materials of other shops also as a service measure.

One technician is utilized to maintain the stores. It is suggested that, one stores clerk may be deputed from stores for stores activities.

Staff requirement

Activity	No. of staff
	required
Preventive maintenance	29
Breakdown maintenance	03
Out station	10
Manufacturing and other development activities	10
Total	52
LR 12.5%	6.5
	58.5
	SAY 59

Even though the required staff strength is 59 only, duly considering the future work load and other development activities additional **18 staff is allowed** .

Hence the requirement of artisans for MMW shop is 77 staff.

3.4 **Supervisory posts:**

There are 9 SSEs are working in MMW against the sanction of 13 posts.

One SSE is working in M&P wing and 1 SSE who is competent authority for chain testing is working in Chain testing area.

one 1 JE is working in MMW shop against the sanction of 4.

Since most of the work is technical related and the knowledge of Supervisors is very much needed in trouble shooting failures and designing new jobs, the present staff strength of 9 SSE and 1 JE in found essential and three more JE post is allowed.

Sanction Vs. requirement

SI.	Category	Sanction	Actual	Requirement	Surplus
No.					
1	SSE	13	09	09	04
2	JE	04	01	04	-
3	Sr. Tech	30	27	27	03
3	Tech-I	58	41	41	17
4	Tech-II	08	04	04	04
5	Tech-III	07	-	05	02
	Total	120	82	90	30

<u>CHAPTER – IV</u>

4.0 PLANNING BRANCH'S REMARKS ON CO-ORDINATING OFFICER'S VIEWS

The draft work study report was sent by e-office to WM/D/LW/PER & Co-ordinating Officer on 08-09-2020 to offer his remarks on the work study report .

No remarks was received till 11.12.2020, hence the final work study report is released without the remarks of the Coordinating Officer.

Chapter V

5.0 FINANCIAL SAVINGS

If the recommendations made in the study report are implemented, the annual recurring financial savings will be as under:

SI. No.	Category	Grade pay (Rs.)& level	No. of posts	Money value (Rs.)	Total Annual savings (Rs.)
1	SSE	4600-L7	04	1,09,571	52,59,408
2	Sr. Tech	4200-L6	02	86,463	20,75,112
3	Tech-I	2800-L5	17	71,078	1,44,99,912
3	Tech-II	2400-L4	04	62,361	29,93,328
4	Tech-III	1900-L2	03	48,614	17,50,104
	Total		30		2,65,77,864

ANNEXURE -I

SANCTION ACTUAL VACANCY STATEMENT OF MMW SHOP - WPO/O/LW/PER

	San, Act & Vac position of LW/PER as on 01.07.2020																														
		SSE			JE			Su	p.To	tal	S	Sr. Tech Tech Gr.I			Tech Gr.II Tech Gr.III				Artisan Total Group-D						TOTAL	.(Sup+Art+G r.D)					
$GP \rightarrow$	-	4600			4200)	a		Total			4200			2800)		2400)		1900)					1800)			
Shops	San	Ac t	Va c	Sa n	Ac t	Va c	!	Sa n	Ac t	Va c	Sa n	Ac t	Va c	Sa n	Ac t	Va c	Sa n	Ac t	Va c	Sa n	Ac t	Va c	Sa n	Ac t	Va c	Sa n	Ac t	Va c	San	Act	Vac
Cr/Painter *	0	0	0	1	0	1		1	0	1	21	20	1	41	21	20	4	9	-5	13	12	1	79	62	17				80	62	18
MW	13	10	3	4	2	2		17	12	5	30	28	2	58	46	12	8	8	0	7	1	6	103	83	20				120	95	25
total	13	10	3	5	2	3		18	12	6	51	48	3	99	67	32	12	17	-5	20	13	7	182	14 5	37				200	157	43

^{* 9} Permanent posts of Tech.III/CR/Painter have been surrendered vide this office Surrender Memorandum dated 22.07.2020.

ANNEXURE II

FAILURE/MAINTENANCE HOURS DETAILS

SI.No	Month	Total	No. Of down	Break	Brea	k down	Hours	Preventive Maintenance						
		2017- 18	2018-	2019-	2017- 18	2018- 19	2019-	2017- 18	2018-	2019-				
1	April	7	13	3	724	557	95	5056	6644	61920				
2	May	16	5	3	1169	264.5	246	5512	6670	6876				
3	June	12	5	1	722.5	412	186.5	5888	1496	6312				
4	July	3	6	5	361.5	440	399	F880	6440	7806				
5	August	8	A	8	339.5	73	503.5	6672	160g	7572				
6	September	7	7	5	728	315.6	444-6	6904	12/31	6936				
7.	October	4	8	8	231.5	65.5	143	6480	6104	1528				
8	November	13	6	6	695.5	443	6835	6328	6813	7866				
9	December (XMAS)	9	4	5	505.5	385	612.5	9616	10764	11072				
10	January	3	4	10	307	224	892.5	4992	5412	15712				
11	February	2	4	1)	91.5	169-6	1032.	6489	6718	7060				
12	March	7	2	8	106.5	86.5	707.6	7212	ChAO	7338				
1	TOTAL				HIL									

ANNEXURE III

MW ARTIZAN STAFF STRENGTH - 74

CD - 2

GW - 2

total - 78

LESS CR - 3

DEATH- 1

CWM/O- 1

DEMO 1

CD wkg GW 2

LTO 1

CMT 1

Physical total - 68

SSE 9

JE 1

CH.OS 1

Total 11

ANNEXURE IV

MILLWRIGHT SHOP-SECTION WISE STAFF DISTRIBUTION

SI No.	Section	No.of staff
1	R.O.Plant	6
2	CENTRAL MACHINE SECTION	5
3	M&PR	7
4	EOT CRANE	20
5	CHAIN	5
6	WHITING JACK	6
7	WHEEL & TYRE	8
8	FABRICATION & SPRING	5
9	ERECTION	7
	TOTAL	69