

EASTERN RAILWAY

**WORKSTUDY REPORT
ON**

**REVIEW OF WORKINGS OF ARTISAN AND GR-D STAFF DEPLOYED IN THE
ENGINEERING (WORKS) DEPARTMENT OVER ASANSOL DIVISION
CONSEQUENT UPON THE CHANGED SCENARIO**

**(Study No.WSER-07/19-20)
(Submitted on 04.09.2019)**

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ACKNOWLEDGEMENT

The study team hereby acknowledges its deep gratitude to Sr.DEN/Co-ordination./ASN for his valuable suggestions and guidelines to the study team for conducting the study. The study team will even be thankful to all SSE/SE working in different IOW units for their heartiest cooperation by supplying all necessary information and related data to complete this study in time.

METHODOLOGY ADOPTED

The following methodology has been adopted in carrying out the study:

- i) Collection of data in regard to workload of Artisan staff and erstwhile Gr.D staff.
- ii) Discussed with SSE/SE in different IOW units
- iii) Studied the existing workload and deployment of staff
- iv) Analyzed the above and recommendation made.

AUTHORITY & TERMS OF REFERENCE

As approved by the competent authority, the subject work study has been undertaken by the GM's Efficiency Cell of Eastern Railway under the following terms of reference:-

To review the workload and assess the requirement of Artisan staff and erstwhile Gr.D staff under different works unit over ASN division based on the execution of no. of complains per day.

SUMMARY OF RECOMMENDATION

Sl. No.	Recommendation	Para Ref.
1.	It is recommended that the actual total requirement of Artisan and erstwhile Gr.D staff to carry out the existing workload of 8 Works unit, will be 322 posts as against the sanctioned strength of 399 which would result in surrender of $(399-322) = 77$ vacant posts consisting of 36 posts of Artisan staff and 41 posts of erstwhile Gr.D staff.	3.6

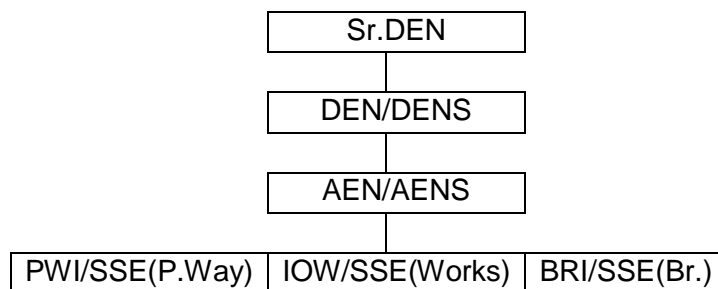
EXECUTIVE SUMMARY

Study Name & No:	REVIEW OF WORKINGS OF ARTISAN AND GR-D STAFF DEPLOYED IN THE ENGINEERING (WORKS) DEPARTMENT OVER ASANSOL DIVISION CONSEQUENT UPON THE CHANGED SCENARIOS OF THE SAID WING (STUDY NO.WSER-07/19-20)
Year of conducting the study:	2019-20
Terms of reference:	As approved by the competent authority, the subject work study has been undertaken by the GM's Efficiency Cell of Eastern Railway under the following terms of reference:-
Methodology adopted:	<ul style="list-style-type: none"> i) Collection of data in regard to workload of Artisan staff and erstwhile Gr.D staff. i) Discussed with SSE/SE in different IOW units ii) Studied the existing workload and deployment of staff iii) Analyzed the above and recommendation made.
Existing Sanctioned Strength:	399
On roll strength	319
Vacant post:	80
Proposed Surrender:	77
Justification	The requirement of Artisan staff and Erstwhile Gr.D staff under 8 Works units over ASN division has been made based on the existing work load i.e. on the execution of no. of complains per day.

CHAPTER-I

1.0 INTRODUCTION:

- 1.1 Civil Engineering department or commonly known as Engineering department of the Railways specifically performs or holds responsibility of three different kind of works. These are:
- i) To upkeep the railway tracks under the supervision of PWI or SSE/P.Way.
 - ii) To upkeep the buildings, sewage, water system etc under the supervision of IOW or SSE/Works.
 - iii) To upkeep the bridges under the supervision of BRI or SSE/Bridge.
- 1.2 The maintenance jobs under engineering (works) department over ASN division are being made mainly in the main line from the distant signal of Khana junction in the east to distant signal of Jhajha station in the west. On the Grand Chord line, the administrative control of Asansol Division is up to the distant signal of Pradhankhanta. The territorial jurisdiction of this division also extends over such branch lines as Andal-Sainthia, Andal–Tapasi–Barabani–Sitarampur, Madhupur–Giridih, Jasidih–Baidyanathdham and Josidih to Dumka. It serves the densely populated states of West Bengal, Bihar & Jharkhand covering seven districts viz. Bardhaman and Birbhum in West Bengal, Jamui in Bihar & Dhanbad, Jamtara, Giridih, Deoghar and Dumka in Jharkhand.
- 1.3 The organizational set up of Engineering Department of any division is more or less the same. This can be showed by a tree as under:



- 1.4 There may be one or more PWIs, IOWs and BRIs under one AEN. It depends upon the convenience of the administration. There are 08 units of IOW in Asansol division.
- 1.5 Presently 319 nos of staff comprising 80 Gr.C/Artisan and 239 erstwhile Gr.D against a total sanctioned strength of 399 posts, are working under 08 works units of ASN division with a Total workload of 2451.236 ITKM catered by 08 IOW units. The main object of conducting the subject study is to assess a need based requirement of manpower consequent upon the changed scenarios of these IOW units.

CHAPTER-II

2.0 EXISTING SCENARIO

- 2.1 All units i.e. works units are under the overall control of Sr.DEN/Co-ord/ASN and under direct supervision of concerned DEN & AEN. Each works unit is functioning directly under SSE/Works in regard to maintenance of Railway assets and to look after the passenger amenities as well as staff welfare.
- 2.2 The main functioning of IOWs is to upkeep the building, sewages and water supply system. Of course there are other works such as maintenance of road, pipeline, rest houses and plantation etc. But those three are considered as the main function. Regarding repairing and other maintenance works of building, sewage etc, it is enough to say that major repairing works are carried on by the contractual agencies at present. IOWs units are responsible for the patch works or any small repairing works.
- 2.2.1 In addition to petty work, the staff also attends to emergency calls, complaints received from the officers and staff over phone.
- 2.3 There are 08 SSE(W) units in ASN division. The details of the IOW units are given hereunder:
- i) SSE/W/MDP
 - ii) SSE/W/PAN
 - iii) SSE/W/EAST/ASN
 - iv) SSE/W/WEST/ASN
 - v) SSE/W/COL/UDL
 - vi) SSE/W/L/UDL
 - vii) SSE/W/PAW
 - viii) SSE/W/STN
- 2.4 The workload in terms of ITKM (Integrated Track Kilo Meter) of each works unit under ASN division is appended below:

	Unit	ITKM
1.	SSE/W/MDP	395.954
2.	SSE/W/PAN	252.626
3.	SSE/W/EAST/ASN	345.511
4.	SSE/W/WEST/ASN	288.693
5.	SSE/W/COL/UDL	278.059
6.	SSE/W/L/UDL	239.536
7.	SSE/W/PAW	329.267
8.	SSE/W/STN	321.591
	Total	2451.236

- 2.5.1 The sanctioned strength vis-à-vis on roll position of Artisan and Erstwhile Gr.D staff deployed in 8(Eight) Works unit as on 27.06.2019 supplied by Sr.DEN/Co-ord/ASN office is furnished below: The said staff position is attached in Annexure-I and the combined staff position i.e. (P-way & Works) as on 02.05.19 supplied by Sr.DPO/ASN office is also attached in Annexure-II.

Sl. no.	Category of staff	S/S	MOR	Vac
(Group C)				
1.	Fitter (MCM,grade I,II,III)	35	27	8
2.	Carpenter (MCM,grade I,II,III)	19	14	5
3.	Mason (MCM,grade I,II,III)	29	20	9
4.	S/Writer(MCM,grade I,II,III)	10	7	3
5.	Black Smith (MCM,grade I,II,III)	8	2	6
6.	FPO (MCM,grade I,II,III)	16	10	6
Sub-Total		117	80	37
Group D				
1.	Khalasi	171	142	29
2.	Mali	20	18	2
3.	Valveman	79	73	6
4.	Chowkidar	12	6	6
Sub-Total		282	239	43
TOTAL Gr.C & Gr.D		399	319	80

- 2.6 Presently major works under IOW units have already been given to private agency. Now this contractual work has been processed through special work and yearly contract basis i.e. zonal work. The store function under each IOW has also been decreased due to contractual work. Existing staff are deployed to cater the small repairing works based on the complaints registered by staff/officers.

- i) Building (Service/Residential)
- ii) Major/Minor Bridge (Inliner water way)
- iii) FOB/ROB/RUB
- iv) Water treatment plant
- v) Surface drainage
- vi) Underground drainage
- vii) Road area
- viii) PF(covered/uncovered)
- ix) Pipeline
- x) Pumping installation

- 2.6.1 Comparative statement regarding **percentage of work** executed by IOW units over Asansol division through contractually as well as departmentally based on the available data supplied by the concerned SSE of IOW units is focused in Table-A.

TABLE-A

[illegible]

2.6.2 Average %age of contractual / departmental work vis-à-vis items of work over Asansol division has been assessed after summarizing the comparative analysis of previous Para as shown here in under:

Sl.No.	Items of work	Involvement of Total 8no. of IOW units over ASN division	Avg.% of work done by		Remarks
			Contractually	Departmentally	
1	Residential Building	8	86%	14%	
2	Service Building	8	91%	9%	
3	Water Treatment Plant	5	80%	20%	Power supply & Pump maintenance work under Electrical deptt. and other maintenance work done by IOW units.
4	Surface drainage	8	92%	8%	Mainly maintenance of S/drainage done by Medical Dept only 8% of emergency work at the time of Rainy season done by IOW units
5	Underground drainage	8	96%	4%	
6	Road Area	8	98%	2%	
7	Pumping installation	6	74%	26%	Installation of maintenance as well as operation of pump mode by Elect.Dept only operation of valve under IOW Units.
8	Major Bridge	6	96%	4%	
9	Minor Bridge	7	96%	4%	
10	FOB/ ROB / RUB	8	88%	12%	
11	PF Covered	7	88%	12%	
12	PF Uncovered	6	96%	4%	
13	Pipeline	8	74%	26%	
14	Hand tube well in nos./Deep tube well	5	30%	70%	Installation of H/Tube well & D/Tube well are made by Contractual agency only little maintenance done by departmental staff.

It is also observed from the above table that the departmental work is comparatively decreased with respect to the contractual work. The percentage resulted of departmental work has come to 15%.

2.7 Major complaints faced by the IOW units over ASN division in connection with the maintenance of Railway assets are of common nature. Accordingly departmental staff is booked to act on urgent basis.

The following major complaints are as under:

- i) Life of staff quarter/service building is more than 50 years and roof of the building is jack arch with lime concrete terracing. Almost main complaint received from occupants of staff quarter due to leakage of building as well as service building. This type of building roof will be converted into RCC roof.
- ii) Repair of damaged doors & windows of staff quarters/service buildings.
- iii) Repair of damage pipeline, replacement of corroded distribution pipeline including fittings.
- iv) Repair of drainage system.
- v) Repair of floor, wall, ceiling etc of staff quarter/service building.
- viii) Artisan is a skilled Gr"C" staff and is responsible to work various maintenance job such as repairing of Pipe line, Hand tube well, door/window etc. Khalasi are utilized for multipurpose requirements. They assist the Artisans in various fields of work as mentioned above and also carry out miscellaneous activities as & when required.

2.7.1 Details of total one year complaints from April'18 to March'19 are shown in a tabular form.

Works Unit	Total no. of complaints	Type of complaints			
		Pipe line & Hand tube well	Masonry	Door/Window	others
SSE/W/MDP	9012	2885	2553	2774	800
SSE/W/PAN	621	185	257	136	43
SSE/W/EAST/ASN	4033	1190	1593	597	653
SSE/W/WEST/ASN	177	55	51	46	25
SSE/W/COL/UDL	2614	532	1335	683	64
SSE/W/L/UDL	2033	1375	422	236	-
SSE/W/PAW	2041	1203	506	230	102
SSE/W/STN	401	120	154	127	0
TOTAL	20932	7545	6871	4829	1687

- 2.8 The contractual work under IOW units over ASN division is of three types viz. (i) capital work, (ii) special work & (iii) zonal work. All new types of project is under the capital work and it is processed through works programme. Similarly special and zonal works are executed in connection with the maintenance of existing Railway asset through revenue load. The details fund of capital, special and zonal work against each IOW unit over ASN division for the year 2018-19 had been provided for execution of new work as well as maintenance railway asset.

SL. NO.	UNITS	No. of capital works	Value in Rupees	No. of zonal works	Value
1.	SSE/W/STN	42	371194321.32	6	30500000.00
2.	SSE/W/PAW	23	818952551.07	3	13396209.00
3.	SSE/W/LINE/UDL	15	180018772.00	3	11845000.00
4.	SSE/W/COL/UDL	6	90925799.00	3	18500000.00
5.	SSE/W/WEST/ASN	9	36355502.00	3	17000000.00
6.	SSE/W/EAST/ASN	25	368194279.31	3	20500000.00
7.	SSE/W/MDP	3	18268751.22	4	15500000.00
8.	SSE/W/PAN	28	357658780.51	3	11239746.00

CHAPTER-III

3.0 CRITICAL ANALYSIS RECOMMENDATIONS:

3.1 Ongoing through the different stages of operation and activities involved in different IOW units over Asansol division in connection with the construction of new asset as well as maintenance of existing railway assets has been observed by the study team. The proposed requirement of manpower under IOW units over ASN division have been critically analyzed herein under based on the existing workload as discussed in different Paras of Chapter-II.

Keeping the optimum level by using the resources including the manpower in mind, the study has been conducted here in determining the manpower based on the workload i.e. complains tackled by the departmental staff.

3.2 Total 8 IOW units of ASN division are under the control of Sr. DEN/Co-ord/ASN. The study team have undertaken 8 IOW units for assessment of manpower based on the workload catered by the departmental staff.

3.3 Maintenance of existing and new asset of about 15% is undertaken by IOW units by deploying their existing Artisan and Gr.D staff throughout the year. The details item of works such as Building, Minor Bridge(FOB,ROB RUB) Water treatment plant, Surface drainage, Underground drainage, Road area PF(covered/uncovered), Pipeline and Pumping installation, staff are more utilized mainly for maintenance of building as well as pipeline.

The details maintenance work under IOW units is described as under:

i) Building: (Residential & Service)

As stated in Para 2.6.2, on an average 12% of works is carried out by the departmental staff and on an average 88% of maintenance of works have already been off loaded to the contractual agencies. Leaky roof treatment, repairing of damaged doors/windows, walls, floors and sanitary works etc are the main repair jobs.

ii) Major & Minor Bridge(FOB/ROB/RUB):

Mainly Major and Minor bridge are maintained by Bridge dept. Major work of 96% is done through contractual agency and rest 4% work is complied by departmental staff. Jungle cutting of linear water way at the time of summer season and changing of broken wooden/concrete slab under FOB, ROB & RUB are the main maintenance work of about 12% is catered by departmental staff.

iii) Water treatment plant:

There are five water treatment plants under five IOW units among the eight works unit. The maintenance in regard to pump & power supply is tackled by Electrical department in association with contractual agency

and the rest 20% of departmental work is catered by concerned IOW units. The detail of departmental work is shown as under:

Checking of:

- a. Chlorination of water
- b. Iron removal from water
- c. Water softening

Physical list in every month and chemical test at an interval of 3 months are to be made in the outside laboratory by the help of department staff.

iv) Surface /Underground drainage:

The length of underground drainage is very minimum with respect of surface drainage. Maintenance of drainage system at service building/colonies is executed by medical dept. and on an average 6% department work i.e. repairing of drain as well as cleaning of drain near L/C gate at the time of rainy season is carried out by IOW staff.

v) Road area:

Road repairing works of about 98% have been off-loaded to contractual agency on yearly contract basis and rest 2% emergency work is maintained by departmental IOW staff. For which Artisan staff along with Kh. Helper is booked on an average 2 to 3 days/month.

vi) PF(covered/uncovered):

The following maintenance works under PF (Covered /Uncovered) on an average 8% are as under:

- a. Changing of one or two broken AC sheets
- b. Cleaning of pipeline attached with PF covered portion during rainy season
- c. Earth feeling with cementing near holes in PF uncovered portion
- d. Jungle cutting near PF fencing

In connection with the above work Artisan staff along with Khalasi is booked on an average one or two days/month for the said job.

vii) Pumping installation:

Installation and maintenance of pump is done by Electrical Department only operation of valves for supplying water is undertaken by valve man.

One valve man in 12 hrs roster is required for operation all valves under three pumps with the exception some IOW units where requirement of valve man is calculated based on work volume and situation. The existing Valve man under eight (8) Works unit is felt

justified to carry out the present workload. On an average 26% of departmental work is catered by Works unit.

The following items are to be changed in connection with maintenance of Hand tube well:

- i) Leather sheet valve
- ii) Leather bucket
- iii) Nuts and bolts
- iv) Plunger rod
- v) Handel.

Contractual agency is required to attend for installation of handtubewell as well as failure of strainer. The engagement of contractual agency is about 30%. Due to lowering the water level during summer season i.e. attention regarding maintenance handtubewell to be given more than the other months of a year. Artisan staff along with khalasi is booked on an average 14 days/month for the above work. The magnitude of departmental work is 70%.

viii) Pipeline:

Average 26% maintenance work catered by IOW units over ASN division is focused as under:

- i) Repairing and replacement of damaged pipeline including fittings.
- ii) Cleaning and replacement of corroded pipeline
- iii) Cleaning of OH tank and roof tank in a particular time at colony and roof tank in a particular time at colony.

In view of the above, Artisan along with Kh/Helper is required to book on regular measure for the maintenance work.

3.4

In view of the analysis made in para 3.3 and the maintenance work against complaints as stated in para 2.7.1, the study team has assessed the requirement of manpower for eight (8) no of Works unit as mentioned in para 2.7.1 based on booking of Artisan staff and Kh.helper against each item of work and the other item of works which are not mentioned known as misc.work, is depicted as under:

The reviewed result as per observation in connection with below mentioned serial no vis-à-vis job-wise bare requirement of manpower (i.e. group of manpower), is as follows:-

1) For Pipe line & Hand tube well maintenance work, manpower comprising 3 Artisan & 3 Khalasi are required to attend 3 no of complaints per day (on an average) for each unit.

2) For Masonary work, manpower comprising 3 Artisan & 3 Khalasi are required to attend 3 no of complaints per day (on an average) for each unit.

3) For door & window repairing work, manpower comprising 2 Artisan & 2 Khalasi are required to attend 2 no of complaints per day (on an average) for each unit.

4) For other miscellaneous work, manpower comprising 1 Artisan & 2 Khalasi are required to attend 1 no of complaint per day (on an average) for each unit.

The workload of 8 separate IOW units have been shown combindly where in the no of working days is found to be 26 days per month.

	Type of maintenance work	Total no. of complaints received by 8 Works unit in a year. (on an avg)	no. of complains attended by Departmental staff in a month in each unit (on an avg)	No. of complains attended by each unit (on an avg)	Need based requirement of man power per day for each unit.
1.	Pipe line & Hand tube well	7545	$7545/12 \times 8 = 79$ nos.	3	3 Artisan and 6 Khalasi
2.	Masonry work	6871	$6871/12 \times 8 = 72$ nos.	3	3 Artisan and 6 Khalasi
3.	Door/Window repairing	4829	$4829/12 \times 8 = 50$ nos.	2	2 Artisan and 2 Khalasi
4.	Other Misc. work	1687	$1687/12 \times 8 = 18$ nos.	1	1 Artisan and 2 Khalasi

3.4.1 The above table vis-à-vis the reviewed result as per observation indicates that four separate groups of manpower are required to cater the daily departmental work load. It is envisaged from the above position that bare requirement of Artisan staff and Khalasi works out to 9 and 16 respectively per works unit for the departmental work.

So the bare requirement of Artisan staff and Khalasi comes to 9 and 16 respectively per unit, Therefore, the total bare requirement of Artisan staff and Khalasi for 8 Works unit assessed to 72 i.e.(9x8) and 128 i.e. (16x8) respectively. Providing L.R. @ 12.5%, the actual requirement of Artisan staff and Khalasi will be 81 and 144 respectively as against the sanctioned strength of 117 and 171 respectively. Therefore $(117-81) = 36$ posts of Artisan staff and $(171-144) = 27$ posts of Khalasi are recommended for surrender from the IOW units.

3.5 The nature of work carried out by Mali and chowkider under different IOW units over Asansol division are stated as under:

(i) He will grow seasonal flowers/pot culture in different season.

- (ii) To spray insecticides and fungicides as well as lawn mowing work and potting and repotting of new/existing potted plants.
- (iii) To decorate the potted plants in different corners of office premises/recommended places.
- (iv) Regular watering, manuring, weeding, spraying, lawn mowing and hedge cutting operations are catered by Mali with the assistance of khalasi.
- (v) Mali should collect seeds of seasonal flowers and store them properly for use of next year.
- (vi) Mali shall be held responsible for maintenance and care of plants and garden under his charge.
- (vii) The flower vases in different officers chamber are decorated by Mali with the help[of khalasi.
- (viii) Digging of plantation pits and hedge trenches for development of hedges/edge are undertaken by Mali.
- ix) Chowkidar is responsible to keep a watch on office and stores during and after office hours. He will responsible to take precautionary measures relating to prevention of fire and damage to Govt. property.

The study team therefore is of the opinion after considering above work that the requirement of Mali and Chowkidar under IOW units will be inescapable. Hence existing 18 posts of Mali and 6 posts of Chowkidar are recommended to continue and 2 vacant posts of Mali & 6 posts of Chowkidar under IOW units over Asansol division will be made surplus.

3.6 Summarizing the above conclusion, at a glance position stating the revised Sanctioned strength as against the present Sanctioned strength and the posts rendered to be surplus is tabulated as under.

Sl. No.	Category of staff	Existing Sanc. strength	Existing MOR	Proposed MOR i.e. Revised sanction strength	Recommen- ded surrender	Vac.	Para ref.
1	Artisan staff	117	80	81	36	37	3.4.1
2	Khalasi	171	142	144	27	29	Do
3	Valve man	79	73	73	6	6	3.3 (vii)
4	Mali	20	18	18	2	2	3.5
5	Chowkidar	12	6	6	6	6	Do
		399	319	322	77	80	

Recommendation

It is recommended that the actual total requirement of Artisan and erstwhile Gr.D staff to carry out the existing workload of 8 Works unit, will be 322 posts as against the sanctioned strength of 399 which would result in surrender of $(399 - 322) = 77$ vacant posts consisting of 36 posts of Artisan staff and 41 posts of erstwhile Gr.D staff.

CHAPTER-IV

4.0 FINANCIAL APPRAISAL:

- 4.1 According to recommendation made in Para 3.6, the financial savings achieved on account of surrender of 77 vacant posts consisting of 36 posts of Artisan staff and 41 posts of erstwhile Gr.D staff under different works unit over ASN division is calculated based on lower scale as under:

Category	No. of posts	Scale of Pay	Mean pay	DA @ 12%	Monthly	Yearly
		Figures in Rs.				
Artisan staff	36	19900-63200	41550	4986	1675296	20103552
Erstwhile Gr.D staff	41	18000-56900	37450	4494	1719704	20636448
Total	77					40740000

Thus, consequent upon implementation of recommendations the annual savings would be Rs.4,07,40,000/-.