CHAPTER-I

1. INTRODUCTION

Work study on "Review of staff strength of P-way staff of BPL division" has been taken as a "Crash Work Study" for the year 2018-19.

The maintenance of track is responsibility of Engineering department. The maintenance of track is a vital activity in the train operation in relation to safety & punctuality. It is the duty of engineering department to up keep the standard of track using engineering parameters for the safe running of trains.

1.1 As per Railway Board's letter No. 2006/CE-I/Misc./2(RUBs) of dt 25.03.2007, manned and unmanned level crossing gate of all railways may be closed by construction of Limited Height Subways. Railway Board also provides funds for this LHS work.

1.2 Duties of Gangman

The Gangmen perform the following regular duties of permanent way gangs:

1.	Through packing.
2.	Shallow screening
3.	Picking up slacks.
4.	Lubrication of rail joints
5.	Minor attention to cess.
6.	Clearing catch-water drains, side-drains and water ways of bridges.
7.	Casual renewal of rails.
8.	Casual renewal of sleepers
9.	Adjustment of creep over short length.
10.	Opening, examination and overhauling of level crossings.
11.	Attention to points and crossings etc.

The following items of work are carried out by the Gangmen not as a regular measure but whenever there is demand for such works which may be termed as sporadic in nature.

1.	Loading and unloading of materials.
2.	Lorrying out materials for other than casual renewals.
3.	Repairs to bridges.
4.	Painting of rails on station yards and bridges.
5.	Renewal and resurfacing of points and crossings
6.	Complete realignment of curves.

1.3 Duties of Key Man:- The prime duties of Key man are-

1.	His entire beat to be inspected by foot once a day for track as well as bridges and return along the opposite rail. While inspecting, he should carry with him all necessary tools & equipment as prescribed.
2.	While walking over his section, he should look for loose spikes, keys, chairs, fish bolts, fittings on grinder bridges/culverts, broken/burnt sleepers, broken plates/tie bars etc. and attend them as necessary.
3.	At unmanned level crossings he should maintain the flange ways between the check and the running rails clear of obstruction.
4.	If any unsafe condition of track is noticed such as broken rails, wash away of ballast, he should at once protect the line as per rules and immediately report to Mate, ASM, SE etc.

1.4 Duties of Mate:- The main duties of Mate are-

1.	He shall inspect the whole gang length once in a week for on the spot supervision regarding track condition. He should ensure the tools & equipment as prescribed are available at site of work.
2.	He shall see that the prescribed system of track maintenance is adhered to and the task allotted to him either verbally or through gang chart/diary are carried out efficiently.
3.	The Mate shall see that the whole of his gang length is kept neat and tidy and all loose materials are removed from the track.
4.	He should see that his length of line is kept safe for the passage of trains and any unsafe condition is reported immediately.
5.	In the event of train accident in between section, Mate should render assistance to Guard & Driver of the train for the protection.

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CHAPTER-II

Staff Strength

2 Bhopal division spread over from Khandwa to Bina, Bina-Guna-Ruthiyai-Maksi, Guna-Shivpuri-Gwalior section, BIR-KNW section and MKC-UJN section details of these sections is as following.

Section	KMs	Line
Khandwa-Itarsi Section	183.42	Double Line
Itarsi-Bhopal Section	96.70	Double Line
Bhopal-Bina Section	138.37	Double Line
Bina-Guna-Ruthiyai-Makshi Section	332.36	Single Line
Guna-Shivpuri-Gwalior Section	227.05	Single Line
Bir-Khandwa Section	33.41	Single & Double Line
Makshi-Ujjain Section	44.88	Single Line

To maintain the above length of track, following staff are deployed.

2.1 Sanctioned strength position of TRACK MAINTAINER staff of BPL is as under:-

SN	Category	SS	MOR	Vac
1	Track maintainer-I	289	113	176
2	Track maintainer-II	577	522	55
3	Track maintainer-III	1078	957	121
4	Track maintainer-IV	2783	2403	380
	Total	**4727**	**3995**	**732**

It may be seen from the above table, 4727 posts have sanctioned, 3995 posts are MOR and 732 posts are vacant.

2.2 Workload:

2.2.1 Track maintenance system:

1. Systematic Track Maintenance activities:

a. Repairs, maintain and renew of track components.

b. Improve track geometry.

2. Classification of Works:

Annual maintenance activities are classified-

a. Emergency works

b. Routine track maintenance

c. Major track maintenance.

2.2.2 The P-way staff performs the following regular duties of permanent way gangs:

1.	Through packing.
2.	Shallow screening
3.	Picking up slacks.
4.	Lubrication of rail joints
5.	Minor attention to cess.
6.	Clearing catch-water drains, side-drains and water ways of bridges.
7.	Casual renewal of rails.
8.	Casual renewal of sleepers
9.	Adjustment of creep over short length.
10.	Opening, examination and overhauling of level crossings.
11.	Attention to points and crossings etc.
12	Arranging staff for engineering gate

2.2.3 Engineering gates of BPL division are as under:

SN	**Gate No.**	**Between**	**Kms**
1	181	KNW-ET	574/11-13
2	182		576/3-5
3	189	TLV-BIR	596/4-6
4	189A		599/16-18
5	196	KNW-ET	642/13-11
6	197		646/7-5
7	198		648/29-27
8	200		653/7-5
9	201		655/23-21
10	202		660/25-0
11	202A		663/19-21
12	203		667/18-20
13	205		671/20-22
14	206		677/18-20
15	207		679/22-24
16	209		685/11-13
17	210		687/13-15
18	211		690/0-2
19	212		693/10-12
20	213		696/2-4
21	214		699/2-4

22	215		701/8-10
23	216		703/24-26
24	217		707/20-22
25	218		709/4-6
26	219		710/8-10
27	221		716/30-32
28	223	ET-BPL	729/4-6
29	226		747/24-26
30	227		749/30-32
31	230		575/16-18
32	231		759/6-8
33	235		765/10-12
34	236		767/26-28
35	238		791/8-10
36	238A		795/2-4
37	239		797/24-26
38	241		804/0-2
39	241A		806/6-8
40	242		808/0-2
41	242A		809/18-20
42	243		810/30-32
43	245		820/6-8
44	247		826/22-24
45	249		833/22-24
46	255	BPL-BIN	844/8-10
47	256		848/30-32
48	259		861/29-31
49	262		866/19-21
50	265		874/19-21
51	266		877/1-3
52	269		883/11-13
53	272		894/10-12
54	273		896/28-30
55	274		898/22-24
56	276		906/28-30
57	277		908/24-26
58	281		916/2-4
59	285		922/26-28
60	287		926/10-9
61	290		930/31-29
62	291		932/18-20
63	292		935/1-934/29
64	295		942/24-26
65	298		951/24-26

66	299		955/28-30
67	302		962/20-22
68	305		970/12-14
69	1	BIN-MAKR	977/8-9
70	3	BIN-RTA	978/7-8
71	8		988/8-9
72	9		990/3-4
73	10		992/4-5
74	11		994/7-8
75	14		1002/8-9
76	16		1005/7-8
77	17		1006/9-10
78	37		1042/5-6
79	47		1062/7-8
80	49		1067/2-3
81	50		1069/7-8
82	57		1084/9-10
83	77	RTA-MKC	1122/4-5
84	84		1129/3-4
85	98		1149/1-2
86	100		1152/2-3
87	109		1165/9-10
88	118		1184/9-10
89	124		1196/3-4
90	131		1209/2-3
91	132		1212/2-3
92	136		1218/1-4
93	140		1225/5-6
94	146		1233/6-7
95	159		1255/0-1
96	160		1256/8-9
97	165		1265/8-9
98	170		1273/8-9
99	189		1305/9-10
100	23	GUN-GWL	1140/9-10
101	25A		1145/4-5
102	27		1148/3-4
103	28		1151/1-2
104	29		1152/8-9
105	45		1174/1-2
106	51		1182/5-6
107	56		1190/8-9
108	57		1192/1-2
109	58		1193/7-8

110	61		1198/4-5
111	63		1201/1-2
112	74		1232/6-7
113	81		1248/2-3
114	103		1276/3-4
115	107		1280/2-3
116	115		1292/2-3
117	119		1300/2-3
118	120		1301/4-5

In above mentioned gate, regular staffs are used with LR & RG.

2.3 As per Railway Board's letter No. 2006/CE-I/Misc./2(RUBs) of dt 25.03.2007, manned and unmanned level crossing gate of all railways may be closed by construction of Limited Height Subways. Railway Board also provides funds for this LHS work. As per Railway board's instruction all engineering gate should be replaced by LHS.

2.4 As per MCNTM (The committee on Manpower and Cost Norms for Track Maintenance) formula, requirements of Gange strength as under:

SN	Unit name	Total Track KM	Total man days T+R+M+S	Calculating G/strength	Sanctioned strength	Excess/shortage
1	KNW	92.598	661891.6	239.0801	186	-53.0801
2	KKN	91.55	56465.867	218.5684	149	-69.56837
3	HD	70.31	50602.319	195.5063	145	-50.50632
4	BPF	102.27	67396	261.0197	248	-1301965
5	ET(M)	65.17	62826.799	242.6587	199	-43.65867
6	ET(YARD)	14.362	37810.646	146.5586	144	-2.558596
7	HBD	73.65	66403.49	256.72	224	-32.71999
8	BPL(S)	78.32	62834.545	242.4383	181	-6143831
9	BPL(N)	62.26	51201.867	198.6755	191	-7.675511
10	BHS(S)	86.31	60026.062	232.5666	147	-85.56656
11	BHS(N)	77.67	63429.625	244.9654	133	-111.9654
12	BAQ	78.6	52895.197	205.2801	162	-43.28009
13	BIN(S)	104.24	69675.098	269.7389	195	-747389
14	BIN(N)	28.41	52523.597	202.9832	169	-33.98315

15	ASKN	71.03	55536.938	215.2638	180	-35.26379
16	GUN	80.64	54591.343	211.5204	149	-62.52044
17	SVPI	109.1	72131.818	280.2646	182	-98.26461
18	MOJ	114.47	61132.542	237.1755	199	-38.17555
19	BRRG	95.45	66391.847	257.8004	161	-96.80044
20	SFY	96.63	59151.468	230.0949	190	-40.0949

As per formula for requirement of Gange staff, sanctioned strength of Gangeman is far behind from calculated Gange strength.

But practically, it is not possible to deploy the employees with addition to existing staff because staff crisis problems at all points of Engineering department there. Always technical up gradation is going on as new version of track machine.

2.5 Outsourcing in engineering deptt. of BPL division: (some areas are as under)

1. Track Renewal work
2. Maintenance work of Track as Cleaning of grass, carting of materials) etc.
3. Formation treatment work
4. Collection of ballast, training out ballast by materials trains, leading ballast from stack to track, insertion of ballast in track and profiling.
5. Deep screening of the ballast in track, carried out manually or by deploying ballast cleaning, machine in which case manpower support is provided by the contractor.
6. Introduction of sub ballast and ballast layers
7. Heavy repairs to track, including lifting
8. Complete realignment of curved track
9. Through renewal of rails, sleepers and fasteners
10. Complete renewal of points and crossings, SEJs, traps etc.
11. Loading /Unloading of P-way materials for other than casual renewal
12. Security of materials in a depot which is closed and locked
13. Painting of rails and weld collars
14. Painting of bridge girders
15. Heavy repairs(measurable) to formation, cutting, side drains and catch-water drains
16. Heavy repairs(measurable) to bridges, bridge protection works, river training works and tunnels
17. Providing/repairing road surface at level crossings, including speed breakers
18. Removal of major sand breaches
19. Works arising due to restoration, following breach or accident

20. Clearing of rank vegetation in platforms and in the vicinity of tracks ;in coaching and goods yards, repairs depots and workshops of Engineering Mechanical, Electrical and S&T departments.

2.6 Outsourcing:

2.6.1 Advantages of Outsourcing Activities:

b) Monetary Saving compared to present system.
c) Availability of physically fit person for the job.
d) No detention to trains due to absenteeism, absconding from duty, incapability of doing t he job due to old age etc.
e) Administrative convenience.
f) Less / no union activities therefore better work culture.
g) Enforce conditions as per the requirement and benefits to Railways.
h) Saving of valuable manpower.

2.7 In KRC, all works related to Track are done by mechanized through Mobile Maintenance Gang **.**

2.7.1 Advantages of Mobile Maintenance Gang System:

-Maintenance of track in case of emergency
*Faster due to availability of RMVs (Rail Maintenance Van)
-Transportation of small track machine by RMV
-quick transportation of p-way material
-In-situ repair welds quicker as cut rail and welding material with Gang unloaded at site.
-Saving in the establishment cost due to out-sourcing

Manpower required for Mobile Maintenance Gang system is 0.8 Trackman per km as compared to 1.3 Trackman per km of existing system on IR. Track Maintenance cost by Mobile Maintenance Gang will be Rs. 9 to 10 Lakhs per km as compared to Rs. 14 to 15 Lakhs per km of existing system on IR.

2.8 Special Track Maintenance works Contracts:

1. Manual Deep Screening (Tunnels & Ballasted Deck bridges)
2. Shallow screening
3. Destressing
4. Overhauling of Turnout
5. Overhauling of LC
6. USFD (75%)
7. Auxiliary works of BCM working
8. Ballasting (supply and runout)
9. Removal/making of cess.

2.9 Comparative figures of benchmarking of different P.Way depots of Indian Railways :

SN	Railways	Depot	Men per ETKM
1	IR	-	1.33
2	WCR	BPL	1.52
3	WCR	JBP	1.35
4	WCR	Kota	1.62
5	Benchmark	MB of NR	0.69

2.10 Critical Analysis:

As per RB letter no. E(MPP)2016/1/59 dtd 10.01.2017, Multi-skilling can be planned from the initial stage itself in new activities in Depot. The new activities even in the older establishments can be encouraged by calling for suggestion from employees and employee Unions. This will lead to huge reduction in costs and increased productivity. Multi skilling should be encouraged for artisans' category. To avoid delays for want of other skilled man, it is necessary that multi skilling for Artisans should be introduced.

As per para-2.5, the work-study team observed that some activites of P-way should be outsourced with work (mentioned in 2.4). In all railways, many works have being done by outsourced activities (Para-2.8). The qualities of service of private labours are much better than government's labour.

As per Railway Board's letter No. 2006/CE-I/Misc./2(RUBs) of dt 25.03.2007, manned and unmanned level crossing gate of all railways may be closed by construction of Limited Height Subways. Railway Board also provides funds for this LHS work. As per Railway board's instruction all engineering gate should be replaced by LHS.

In light of above facts, the work of welders can be outsourced and achieve the outturn targets easily. Numbers of trains are increasing day by day. It is not possible to maintain manually strongly.

For save manpower, implement Mobile Maintenance Gang for Track Maintenance (Para-2.7.1). Railway Board has directed Zonal Railways to introduce KRCL system of track maintenance having less than 10 GMT with effect from 01.04.2018.

The posts involved with Gange, at least 16.6% of vacancy position 732 i.e. 120 posts should be surrendered due to so many outsourced activities are in progress (para-2.4).

2.11 Conclusion:

Modification of engineering depot is required as like as other. Also benchmarking figure is higher side. So, need to outsource of so many activities as Work Study team observed.

2.12 Recommendation:

After closing of Engineering gate, outsourcing activities and track maintenance to be done by Mobile Gang, 120 vacant posts of engineering department should be surrendered immediately.

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CHAPTER-III

3 FINANCIAL IMPLICATION

3.1 Financial implication on surrender of 120 vacant posts of Engineering department of BPL division is as under-

Particular	Amount
Mean of grade	37,450
DA@7%	2622
Transportation	1800
Salary Per Month	41,872
X 12 = Per annum	5,02,464
X No. of posts (120)	6,02,95,680
Say	6.02 Crores

Say Rs. 6.02 Crores Per Annum

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