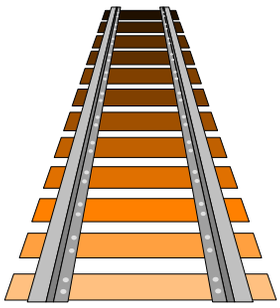

WORK STUDY TO REVIEW THE STAFF STRENGH AT SSE/P.WAY/CGL CHENNAI - DIVISION

SOUTHERN RAILWAY

PLANNING BRANCH

G.275 / WSSR- 401819/ 2019-20

WORK STUDY TO REVIEW THE STAFF STRENGH AT SSE/P.WAY/CGL CHENNAI - DIVISION

STUDIED BY

WORKSTUDY TEAM
OF
PLANNING BRANCH

MAY 2019

WSSR.

I N D E X

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(i)

ACKNOWLEDGEMENT

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(ii)

TERMS OF REFERENCE

Work study to review the staff strength at SSE/P.WAY/CGL – MAS Division.

(iii)

METHODOLOGY

The following methodology has been adopted while conducting the above study.

1. Collection and compilation of data.
2. Discussion with field Officials.
3) Applying rational formula to arrive at the requirement of gang strength as per the data furnished by SSE/P.WAY/CGL, and also on need basis.

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(iv)

SUMMARY OF RECOMMENDATIONS

Recommendation No.1

Thirty eight posts of **Track maintainer** in Pay Band Rs.5200-20200 G.P. 1800/-, is found excess to the requirement may be surrendered and credited to the vacancy Bank

(38 posts)

Recommendation No.2

One vacant post of **Blacksmith - Gr.III** in Pay Band Rs.5200-20200 G.P. 1900/- is found excess to the requirement may be surrendered and credited to the vacancy Bank.

(1 post)

Recommendation No.3

Seven vacant posts of **SSE** in Pay Band Rs.9300-34800 G.P.4600/-, are found excess to the requirement may be surrendered and credited to the vacancy Bank.

(7 posts)

Recommendation No.4

Two vacant posts of **JE** in Pay Band Rs.9300-34800 G.P.4200/-, are found excess to the requirement may be surrendered and credited to the vacancy Bank.

(2 posts)

TOTAL : 48 POSTS

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CHAPTER – I

1.0 INTRODUCTION

1.1 Indian Railways a part and parcel of every Indian's life, which cannot imagine the India without Railways, because this system is the back bone of Indian Economy and one of the Pillars of our Nation.

1.2 The Hon'ble Prime Minister of India described as "Railways perhaps along with the Post Offices are the only two Institutions in India with deep Network which if tapped judiciously can create substantial improvement in the Inter-Land. Railways were always considered only on a transport in our Country, we want to see Railways on the back bone of India's Economy Development".

1.3 The first Rail Transport running in Steam Engine started on the year 1832 at England. East India Company made the Basement for Rail Transportation in India for receiving Cotton and Iron ore to the Ports from the Interior of the Country.

1.4 The First Indian Train started its run on track on April 16, 1853, a Saturday evening 03.35 pm between Boribundar and Thane a distance of 34 kms.

1.5 The second Train of the India connected between Howrah and Hoogly on 15th August 1854.

1.6 The Third Train service made between Vyasarpadi and Walajah road opened on 1st July 1856.

1.7 On the various developments this System never rests and now reaches the World highest Passenger carrier per km. As per the World Bank Data 2014 Indian Railways carried 11.54 lakh passenger per Km, where as China, Japan and Russia together carried 11.09 lakh passengers per Km only.

1.8 Among the 17 zones of Indian Railways, Southern Railway was formed on 14th April 1951 by the Amalgamation of South Indian Railway, Madras and Southern Maratha Railway and Mysore State Railway. It spreads to Tamil Nadu, Kerala, Andhra Pradesh and Pudhucherry.

1.9 Among the various branches in Indian Railway, Engineering branch maintains Buildings, Bridges & Track of Railways. The track is paramount

for Railway transportation, and it is the prime driving factor for speed, safety and efficient operation of the trains, hence very much importance is given to engineering branch in all aspects.

1.10 The present modern technology in permanent way, mostly used 52/60 kg rails , joint less (long welded rails), pre stressed concrete sleepers with elastic rail clips, high tech welding methods, mechanized packing through “on track heavy machines and maintenance”, sophisticated testing’s like USFD, track oscillation inspection cars and other modern techniques are helping for reliability, carrying capacity, speed and safety of the Trains. Also lot of works are outsourced in P.Way like laying, relaying and some of scheduled maintenance works, which are reduced the work load of Railway men. Hence it is imperative to make scrutiny of the man power requirement for track maintenance.

CHENNAI DIVISION

Chennai Division is one of the six divisions in Southern Railway and is covering the districts of Northern Tamilnadu and Southern Andhra Pradesh. Currently it has a route length of over 697.42 Km. Its administrative head quarters is in Chennai, which also happens to be the headquarters of Southern Railway. Chennai division is in operation from 1956.

CHENGALPATTU

i) Chengalpattu Junction Railway station is a Railway junction of the Southern section of the Chennai suburban Railway network situated in the town of Chengalpattu,56 Kilometres south west of Chennai Beach. The station falls in the Chennai railway division of the Southern railway zone of the Indian railway. It is in Kanchipuram district, Tamilnadu, India. Station code of Chengalpattu is CGL. The station is part of Chennai-Villupuram line and the another line Arakkonam-Chengalpattu line.

ii) The Chengalpattu junction being a focal point on the Chennai—Villupuram line, inevitably means that every south bound train from Chennai has to operate via the junction thus making it one of the most crowded railway stations of the Indian Railways. There also several suburban trains operating from and through the station towards Chennai and the station

holds prime importance in the south and south west lines of the Chennai suburban section of Southern Railway.

1.11 **Engineering (PW) Branch:**

Track of permanent way is the single costliest asset on Indian Railways. It basically consists of rails, sleepers, fittings and fastenings, ballast and formation.

Permanent Way is the major activity of the Engineering Branch which is entrusted with the periodical maintenance of the track, bridges, level crossing gates and related areas. A well maintained track is very essential for safety, speed and efficient operation of trains. Continuous monitoring and inspection on daily basis is warranted in ensuring a reliable permanent way.

1.12 But the modern technologies have taken the track maintaining techniques from the era of pick axe and shovels to the mechanized track maintenance. 60 kg rails are the norms of the day. The equipments for testing the track have become sophisticated so as to trace all sorts of failures of the track.

The computerization, ever-present use of various types of track machines, testing techniques etc., has reduced the manual labor and hence man power required for maintenance is reduced. Many of the maintenance activities are now outsourced or are proposed for it.

1.13 So it has become essential to have a glance at the man power requirement for the following reasons.

- To tailor in the cost of mechanical maintenance to improve productivity.
- To create specialized man power for mechanized operations by matching surrender of trackmen.
- To improve the overall financial position of the Railways and to evolve standardized cost norms.

1.14 **Permanent way** is the rail-road on which trains run. It basically consists of two parallel rails having a specified distance in between and fastened to sleepers, which are embedded in a layer of ballast of specific thickness spread over the formation.

1.15 The main components of permanent way or track are rails, sleepers, ballast, formation and fittings & fastenings. The basic function to perform by each component is as below :-

- ✓ **Rails** act as girders to transmit the wheel loads of trains to the sleepers
- ✓ **Sleeper** hold the rails in proper position and provide the correct gauge with the help of fittings and fastenings and transfer the load to the ballast
- ✓ **Ballast** is placed on prepared ground known as formation, which gives a uniform level surface, provide drainage and transfers the load to larger area of formation.
- ✓ **Formation** gives a surface, where the ballast rests and transmits the total load of the track and that of the trains moving on it to the ground below

1.16 **Characteristics of a good Track:**

(i) Sound condition of rails, sleepers and fittings.

(ii) All fittings are available and properly tightened.

(iii) Adequate good quality and clean ballast under the sleepers and also around it with full shoulder width.

(iv) Wear in rails, horizontal or vertical should be within limits.

(v) Alignment of rails should be perfect, kinks or other defects should be within permissible limits.

(vi) Formation is stable with good drainage and slopes well protected by lawn or stones pitching and

(vii) Longitudinal and cross levels should be in good condition and within allowable limits.

1.17 **Annual programme of track maintenance :**

The following programme is normally followed annually on Indian Railways for systematic maintenance of track as per IRPWM.

Period	Work
1. Post-monsoon attention. For about six months after end of	a) Attention to run down length in the entire gang beat to restore section to good shape.

monsoon.	b) One cycle of through packing from one end of the gang beat to the other end including overhauling of 1/3 to ¼ of the beat.
	c) Attention during the monsoon; For about 4 months cleaning of side drains, catch water drains, repairs to bank and picking up of slacks.
2. Pre-monsoon attention: for about 2 months prior to break monsoon.	a) Attention to track as required; picking up of slacks.
	b) Attention to side drains, catch water drains and water ways.
3. Lubrication of rail joints, gap adjustment & curve re-alignment	Patrolling of track during heavy rains.

1.18 **Need for Mechanized Maintenance:**

The mechanized maintenance of track imply the deployment of track machines for day to day track maintenance works which are otherwise done by manual labour. The need for mechanized maintenance of track is felt due to the following reasons.

(i) With the introduction of concrete sleepers, the track structure has become very heavy therefore it becomes difficult for the gang men to lift the track.

(ii) There are chances of breakage of concrete sleepers if the same are hit by gang men using the beaters.

(iii) Manual packing is very hard and laborious job. It is not possible with manual maintenance to get good quality track which is essential for high speed operation.

1.19 **Track Machine working**:-

Mechanized Maintenance of Track means carrying out track maintenance by mechanized means. These are normally mechanical tampers, which are used on railways to tamp or pack the track. The following works are carried out by Track machines,

1. Laying of track
2. Regulating the ballast
3. Ballast cleaning

3. Tamping the track

4. Stabilizing the Track after Tamping.

5. Tamping in Point& Crossing locations

1.20 **Advantages:-**

a) To complete the Track Maintenance quickly.

b) Quality of mechanized maintained track is better than manually maintained track.

c) Track stability is more due to tamping and stabilizing the track with Track machine .So speed restriction can be removed within short period.

d) No hard labour required.

e) More track length can be maintained.

f) Point & crossing can be maintained easily.

1.21 **Inspection of track:**

Purpose of Inspection:

With the running trains, there is continuous degradation of track due to vibrations. The packing of sleeper gets disturbed, the fastenings become loose or some time come out of sleepers and there is general wear and tear in rails and sleepers.

The purpose of inspection of track is to detect various flaws such as looseness of packing, loose or missing fittings, wear in rail, disturbance in cross levels and versines in curves, deficiency of ballast, unusual movements in long welded rails, inadequate or excessive gaps at joints, defects at level crossings such as inadequate gap at check rail and condition of track and bridges in general. In IRPWM is explained in detailed inspection schedules for each Railway officials, supervisors and maintenance staff.

1.22 **Methods of Inspections:**

Various methods adopted for inspection are as under:

(a) By Push Trolley/ Motor Trolley

(b) By Engine of a fast train

(c) By rear most vehicle of a train

(d) By Track recording Car -

Oscillograph Car and OMS instrument

(a) By Push Trolley / Motor Trolley:

This is the age old method of inspecting the track visually by Permanent way Inspectors and Assistant Engineers. All visual defects of track such as loose packing, missing or loose fittings, broken sleepers, deficiency of ballast are noted during the inspection.

(b) By Engine of a fast Trains:

This inspection gives an idea of running quality of track. This inspecting officer keeps standing in the engine and records all jerks, vertical or lateral which are mainly due to loose packing, uneven cross level or misalignment.

(c) By Rear most Vehicle of a train:

By travelling at the rear end of the last coach in running trains, one gets an idea of the running quality of track just as travelling in an engine. Main difference is that lateral alignment defects and cross level defects get amplified in the rear most coach.

(d)Track Recording cum Research Car

By Osillograph Car & OMS Instrument:

Oscillograph car records accelerations in vertical and lateral direction when the train is running at full speed. The probes are kept at pre-determined locations which carry the acceleration through electric cables to the recording machines.

This method of recording gives a very fair idea of various defects generated by rail wheel interaction due to track defects. OMS is the short name of Oscillation Monitoring System, which is portable machine which records both vertical and lateral accelerations.

1.23 **CONTROL:**

This unit of SSE/P.WAY/CGL is under the overall control of Sr.DEN/Co-ordination/MAS and under the direct supervision of DEN/S/MAS & ADEN/ CGL.

Due to innovation and introduction of new technology, modernization of track maintenance (maintenance by track machines), New Broad Gauge Conversion line and redundant activities thereon, right sizing of manpower is necessary.

1.24 The manpower requirement of this unit is arrived at, based on the Rationalized formula, which was approved by Railway Board vide Order No.95/CE-1/CWS/2/Vol.II/Pt.11 dt.06.03.2006. and the present condition and need of the Depot.

i. Duties of SSE/P.Way [prescribed in IRPWM]

- ✓ Responsible for maintenance and inspection of track and safe condition for traffic.
- ✓ Execution of all works incidental to track maintenance including track relaying works.
- ✓ Account and periodical verification of stores and tools.
- ✓ Maintenance of land boundary between stations and at unimportant stations.
- ✓ Co-ordination with the works, Bridge, Signaling and Electrical staff.
- ✓ Accompanying on Inspection of higher officials.
- ✓ Testing of running qualities of track.
- ✓ Inspection of Gangs, Level Crossings, points and crossing, curve Inspection
- ✓ Foot plate inspection, Rear vehicle inspection, Foot inspection.
- ✓ Accompanying OMS/TRC (RDSO) Inspection.
- ✓ check on patrolling
- ✓ Maintenance of station yards.
- ✓ Maintenance of Records
- ✓ Custodian of stores etc.
- ✓ Apart from above P.Way maintenance activities Staff Welfare viz. promotion, claiming of salary, supply of equipment and uniform, procurement of materials, issuing of materials and scrap delivery (DS8)

ii. Duties of JE/P.way: [prescribed in IRPWM]

- ➢ Inspection and maintenance of track in a safe and satisfactory condition for traffic, including execution of all works, incidental to track maintenance.

  Execution of special works, such as

- ➢ a) Renewal, Directed Track maintenance curve re-alignment, deep screening etc.

- To assist the SSE/P.way.
- Co-ordination with Works, Bridge and staff of other departments.
- Inspection of Gangs, Level crossings, Points and Xings, Curves, foot plate inspection, rear vehicle inspection and foot inspection.

iii. P.Way Mistry /Track mate: [prescribed in IRPWM]

- Knowledge of Rules and Signal
- Safety of the Track
- Equipments at site of work
- Muster and Gang Charts/Diary Books
- Observance of sleepers packing during passage of train.
- Precaution when view is obstructed
- Tidiness of section and Safe custody of tools
- Action when line is unsafe or in the event of accident
- Patrolling during abnormal Rainfall
- Commencing work affecting safety of train
- Weekly inspection of Gang length by mate.
- Preventing Tress pass and theft of P.way fittings
- Relief arrangements in emergencies
- Assistance to S&T staff
- Assistance in protection of train and Assistance in placing fog signals

iv. Duties of Key-man: [prescribed in IRPWM]

- Key-man's daily inspection
- Equipment of key-man
- Rectifying the defects whichever possible by him.
- Reporting to Mate and PWI about the defects which require assistance for attending.
- In case of serious defects protection of Track & informing as per rules.
- Work at unmanned level crossings.
- Assisting mate after completing his routine inspection.
- Any materials found fallen safe custody and disposal.
- Apart from daily inspection, he should ensure tightness of fittings in systematic manner.

1.25 **Existing Maintenance Practices on IR**

As on date, the practice of maintenance can be briefly summarized as follows;

(a) In sections where relaying with PSC sleepers has been done,

i. Tamping with machines as and when machines are available, plus Conventional system of maintenance

(b) In sections where relaying has not been done,

i. Only conventional system of maintenance is being used.

1.26 **Monsoon Patrolling :** From September to February month.

Annual programmed regular track maintenance is as follow:

Sl. No.	Period	Work
1.	Post monsoon attention for about six months	Attention to run down stretches, one round of through packing
2.	Pre-monsoon attention for about two months	Clearing of drains
3.	Attention during monsoon for about four months.	Attention to track as required.

1.27 The role of open line organization of Engineering Department in IR mainly meant for maintenance/strengthening/modification of existing infrastructure i.e. track for permitting higher speeds and heavier Loads.

1.28 The manual maintenance of the track has given way to highly mechanized maintenance practices that has become inevitable for the following reasons.

a) The high safety standards that can be achieved
b) The capability for higher axle load, speed etc.,
c) The overall economy in cost of maintenance
d) The accuracy in testing, checking and inspections that can be achieved through mechanization.
e) The necessity to avoid harsh physical work under inclement weather and isolated locations.
f) The maintenance of section speed
g) The need to carry out the maintenance works within the constraints of time for line block etc.,

1.29 **Various track machines and their periodicity of working are Detailed below:-**

Sl. No.	Name of the Machine	Work done	Frequency
1.	BCM-Ballast Cleaning Machine	Deep screening of track	Once in10 years
2.	DUOMAT/CSM – Continuous Action Tamper	Tie Tamping LWR work	Once in 2 years
3.	DGS - Dynamic Track stabilizer	For consolidating track after works affects core stability	Once in 10 years along with BCM
4.	UNIMAT/MPT	Tamping Points & crossing	Once in 2 years
5.	BRM - Ballast Regulating Machine	Boxing of track	As per requirement
6.	UTV - Utility Track Vehicle	Leading and stacking materials	As per need
7.	T-28 - T28 cranes – One job crane (PRC laying Machine)	For re-laying of Points & crossing	As per requirement
8.	PQRS	For re-laying track	-do-
9.	TRT	For CTR of track	-do-

1.30 **Actual Unit (Gang) Performance** :

In the various Units/gangs daily performance record it is observed that the following works are repeatedly allotted by the Supervisor and carried out by the Gangs/Units ;

1. De-weeding
2. Weld collar painting
3. Cleaning
4. Boxing ballast working
5. ERC renewal / greasing.
6. Changing Rubber pad
7. Changing liners
8. Assisting various track machine activities.
9. Packing – manual at points, SEJ and other required areas.
10. Collecting store items.
11. Steel sleepers, chair plates changing.

1.31 **Man power calculation for Track maintenance a brief History:**

Permanent way gang strength was calculated by various methods right from 1931 through maflin formula. Over the years there has been lot of changes in Track maintenance practice, according to the timely changes the man power requirements also varied.

1.32 **IR adopted various efforts to standardize in the past.**

1.	Maflin formula	-	1931
2.	Lobo committee or modified Mafflin formula	-	1959
3.	Modified Maflin formula freezed in	-	1965
4.	Committee Report I in	-	1971
5.	Committee Report II in	-	1972
	No action taken on (4) & (5)		
6.	Appointment of special committee	-	1976
7.	Submission of Report by Spl. Committee	-	1979
	[Though Rly. Board did not give any direct clearance for this formula of 1979, it was implemented with a 5% reduction in many Zones.]		
8.	Committee for machine and manpower Deployment for Track Maintenance appointed in	-	1989
	(Not accepted by Rly.Board)		
9.	(CMMDTM) Report submitted in	-	1995
10.	Kapoor committee appointed on	-	05.01.1996
11.	Reconstituted committee on	-	12.11.1997
12.	Renamed as CMCNTM – Committee for Man power and Cost Norms for Track Maintenance	-	13.08.1998
13.	Finalization of the Report	-	May 2000
14.	Acceptance of the Report by Rly. Board	-	March 2006

The committee of “Man power and cost norms for Track maintenance “(MCNTM) is the latest which covers all the Track parameters and arrive the required Gang strength.

1.33 **Evaluation of Man power through MCNTM formulae:**

The man power requirements of Gangs (Trackman, Gatekeeper, Store watchman) are regularly calculated by division level through TRMS activities. IRICEN will be the custodian of the software for calculating man power.

The whole activities connected to Track Maintenance are clubbed under four main categories under MCNTM studies.

They are:

a) Activity 'T' - Affected by Traffic Density
b) Activity 'R' - Not affected by Traffic Density — Primary activities
c) Activity 'M' - Miscellaneous
d) Activity 'S' - Site specific — Auxiliary activities

Activity 'T' - Affected by Traffic Density

T_1 - Slack attention to

a) Bad spots__
b) Low joints (FP, welded, Glued joints)
c) SEJ (1 No. / km)
d) Minor curve alignment

T_2 - For Tie Tamper Working
a) Pre tamping operations
b) Along with tamper
c) Post tamping operations

T_3 - Casual Renewal of
a) Rails
b) Sleepers
c) Fasteners along with regauging

T_4 - Repair Welding

Activity ' R ' – Not affected by Traffic Density

R_1 - Lubrication of ERCs
R_2 - Shallow screening
R_3 - Loading, Leading, Unloading
R_4 - Overhauling of LC gates
R_5 - Watching of caution spots & misc.
R_6 - Tree cutting for visibility
R_7 - Lubrication of Rails in Curves
R_8 - Accident Relief and carcass removal in run over cases
R_9 - Bridge, Sleeper attention & Renewal
R_{10} - Pre-monsoon attention such as clearing of drains and Waterways, cess repair, de-weeding of track and Attention to cuttings & Trolley refuges
R_{11} - Creep pulling approaches to bridges, turnout
R_{12} - Rectifying damage to LC posts and gates.

Activity 'M' – Miscellaneous

M_1 - Monsoon patrolling
M_2 - Hot weather patrolling

M_3 - Cold weather patrolling

M_4 - Watching vulnerable locations

M_5 - Gate keeping of LC gates

M_6 - Rest Giving for key man

M_7 - Water man duty

M_8 - Store watch man duty

Activity 'S' – Site specific

S_1 - Tunnel Maintenance

S_2 - Bridge substructure maintenance

S_3 - Long girder maintenance

S_4 - Extra maintenance due to very steep curves, deep cutting, steep gradient

S_5 - Maintenance of track on extremely bad formation

S_6 - Look out man duty

S_7 - Fog signal man duty

S_8 - Filth removal from track

S_9 - Security patrolling

S_{10} - Watching of water level in suburban section

1.34 Based on Rational Formula the Track Maintainers [Gang strength] requirement of SSE/P.Way/CGL section is arrived as follows: Number of working Days in a year for P.Way Gang is 291 days (vide above Rly. Bd. Order No.95/CE1/GNS/2.Vol.II/Pt.11 dt.6.3.2006–Item No.4). Annexure-III.

One year	=	365 days.
Sundays	=	52 days.
National Holidays	=	12days.
Casual leave	=	10 days.
Total No. of Holidays	=	74 days.
Available man days per year	=	365 – 74 = 291 days.

$$\text{No. of Track maintainer} = \frac{\textbf{T}+\textbf{R}+\textbf{M}+\textbf{S} \text{ Activities (in man days)}}{\text{Available man days per year } (\textbf{291})}$$

Also the MCNTM Committee recommended that Railway Board may order to review the Rational Formulae once in 5 years to incorporate the effects of Modernization to assess the Right Man Power which is on the anvil.

1.35 **Activities recommended for outsourcing by rational formula.**

1. Formation of treatment Works:
2. Collection of ballast, training out ballast by material train leading ballast from stack to track, insertion of ballast in track
3. Deep screening of the ballast in track, carried out manually on by deploying BCM in which case man power is provided by the contractor
4. Introduction of sub ballast and ballast layers
5. Heavy repairs to track, including lifting
6. Complete realignment of curved track
7. Through renewal of rails, Sleepers and fasteners
8. Complete renewal of points and crossings, SEJs, traps etc
9. Resurfacing of crossings and switch rails
10. Loading and unloading of P.Way materials is in bulk
11. Loading out of P.Way materials for other than casual renewal
12. Security of materials near 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 bides ,drains and catch water
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 insanity of tracks in coaching and goods yards, repair depots and workshops or Engineering/Mechanical/Electrical and S & T depts.

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CHAPTER –II

2.0 PRESENT SCENARIO

SSE/P. Way/CGL section is a double line electrified covering a total track length of 39.725 km Up and 39.725 KM Down (Total 79.45 km).

2.1 The present staff deployment of SSE/P.Way/CGL

The book of sanction of the Unit is 324 and the actual is 276 as on Scale Check Statement of APO Lr.No.M/P(W)/171/IV/MISC, Dated on 18.12.2018. The Scale check Statement is placed as **Annexure -I.**

As per SSE/PWAY/CGL statement of 18.02.2019, Actual strength is 215. i-e 3 SSEs, 3 JE, 1 JE Trainee, 128 Track maintainer, 27 Gate keepers,8 Artizan, Trolleyman, Watchman, Office, ADEN office, USFD, IOW =43 ,1 Sr.Clerk and 1 SNP post.

The actual strength of SSE/P.WAY/CGL Section is placed in **Annexure - II.**

2.2 SSE/ PWAY/CGL

SECTION:

This section is in between POTI and CGL, in CGL-MSB line and CGL and PTM in CGL-VM line. The following stations are in this section namely,

1. Guduvancheri(GI) From Km 41/275
2. Potheri (POTI)
3. Kattangulathur (CTM)
4. MaraimalaiNagar Kamarajar (MMNK)

5. Singaperumalkoil (SKL)
6. Paranur (PWU)
7. Chengalpattu (CGL)
8. Ottivakkam (OV)
9. Padalam (PTM)
10. Karunguzhi(Outer) Upto Km 80/000 (KGZ)

2.3 **Jurisdiction:**

This section GI (excl) to KGZ (excl) from kms 41/275 to 80/000 down lines totally 39.725+39.725=79.45Kms

Designation	Jurisdiction	
	Down line	Up line
SSE/PWAY/CGL (INCHARGE)	41/275-80/000 (39.725 KMS)	80/000 - 41/275 (39.725 KMS)
SSE/PWAY/GI (sub)	41/275-62/000 (20.725 kms) From Guduvancheri to Chengalpattu	41/275-62/000 (20.725 kms) CGL to GI
JE/PWAY/CGL (Sub)	62/000-80/000 (19 KMS)	80/000-62/000 (19 KMS)

2.4 The jurisdiction covered by SSE/P.Way/CGL is divided into (10+1) Gang Sections .

TRACK DATA		
Jurisdiction	41/275-80/000	
Line	Double line (UP&DN)	
Stations	Kilometres	
POTI	43	940
CTM Yard	45	850
MMNK	46	960
SKL Yard	51	480
PWU	55	590
CGL Yard	59	840
OV Yard	68	370
PTM	73	080

2.5 **Gang Details :-**

GANG STRENGTH AND LENGTH

GANG NO	GANG STAFF STRENGTH	LENGTH IN KM
POTI-1	10	3.13
CTM-2	13	2.70
MMNK-3	8	3.10
SKL-4	8	2.70
PWU-I-5	7	3.10
PWU-II-6	10	3.20
CGL-7	11	2.80
TRX-8	13	5.80
OV-9	13	6.00
PTM-10	14	6.2
WOMENS GANG	7	-

2.6 Senior Section Engineer/P.Way/CGL is the in charge for maintaining the track with the help of his assistants. This section is divided into Gang Section (or) Gang beats of about 5 to 5.5km per Gang Section/Beats and kept under the in-charge of P.Way Supervisors for day-to-day maintenance. P.Way Supervisors are assisted by skilled labour i.e., Track Maintainers, Artizans for identifying and correcting the track defects.

2.7 **Duty Hours**

The normal working hours of the gang staff is 07.00 to 12.00 hrs and 14.30 to 17.30 hrs, but during November, December and January, it is 07.30 to 12.30 and 14.00 to 17.00 hrs.

2.8 **Rest for Staff**

Saturday rest for Odd gang (1,3,5,7,9)
Sunday rest for even gang (2,4,6,8,10)

2.9 **Track Maintenance :**

2.9.1 Regular Duties of Track Maintenance

1. Through packing
2. Shallow screening
3. Picking of slacks
4. Lubrication of Rail joints
5. Minor attention to cess
6. Clearing of centre water drains, side drains
7. Casual renewal of Rails

8. Casual renewal of Sleepers
9. Opening & Examining and Overhauling of LC gates
10. Attention to Points & Crossings

2.9.2 Works Outside Regular Duties

1. Loading and unloading of materials
2. Stocking of materials
3. Monsoon Patrol
4. Security Patrol
5. Repair of track in Bridges
6. Stock verification
7. Painting of Rails in station yards and elsewhere
8. Deep screening
9. Resurfacing of Points and Crossings
10. Watching of materials
11. Heavy repairs to track including lifting
12. Complete renewal of Points & Crossings
13. Complete realignment of curves

2.10 SSE/P.Way/CGL -TROLLEY DETAILS

Sl.No	Designation	No.of Trolley	Type of Troolley
1	SSE/P/CGL(INC)	1	Push Trolley
		1	Motor Trolley
2	SSE/P/CGL (SUB-SEC)	1	Push Trolley
3	SSE/P/GI (SUB-SEC)	1	Push Trolley
Total Trolley		4	

2.10.1 Trolley Movements last one year -2017-18

Sl.No	Designation	No. of Trolley Inspection
1	SSE/P/CGL(INC)	48
2	SSE/P/CGL	24
3	SSE/P/GI	24

2.10.2 **Track Machine working for the year – 2018 :-**

Unimat = 09 days

CSM = 52 days

2.11 ATTENTION OF LC GATES

LC Gate Attention Details of the year 2018	
LC Gate no	No.of attention
42	22
43	23
44	23
45	27
46	30
47	24
48	34
49	24
52	22
55	24
57	36
59	25
60	22
61	24
63	33

2.12 **No. of Point & Crossing=72**

2.13 **No. of Curves**

Downline -38
Upline -32
Total -70

2.14 **No of.LWR**

Downline -09

Upline -08

TBM up5 -1

CGL Rd2,3 -2

OV Rd1 -1

SKL Rd1 -1

Total -22

2.15 **No. of LCs**

Manned LC -16

(Engineering LC-09 Traffic LC- 07)

2.16 **Ruling Gradient**

1 in 200

2.17 **Maximum Permissible speed**

MS-VM=105/110 kmph for coaching, (110 for Nominated Trains),
Down line=Ms-VM 60 kmph for goods

Up line = KGZ-CGL=75 kmph for coaching,60 kmph for goods

2.18 **Bridge details**

Major Bridges-6

Minor Bridges-115

2.19 VULNERABLE LOCATION

1	BR.NO 165	57/16-18	UP/DN
2	BR.NO 211	71/14-72/14	UP/DN
3	BR.NO 238	78/1-2	UP/DN

Monsoon Patrolling.

14 beats

2.20 **Special works**

Whenever Track machines like TRT, BCM are working, staff deputed for assisting the track activity.

2.21 **Security Patrol**

3 Days -2016

4 Days-2017

5 Days-2018

2.22 **Emergency patrol**

At the time of unforeseen circumstances like heavy rain, flood, to safeguard and ensure the safety of the track Emergency Patrol is implemented. Staff will be deputed accordingly whenever necessary.

2.23 **Temperature recorded.**

In this section, Maximum Temperature recorded 52 degree centigrade in February in the year 2018, and Minimum Temperature recorded 20 degree centigrade in February, March in the year 2018.

2.24 **Location of stores**

One store is available in SSE/PWAY/O/CGL

It is Adjacent to SSE/PWAY/O/CGL

SSE/PWAY/CGL is the In charge of Stores also.

Track maintainers (Gang staff) are utilized for collection of stores from various Depots.

1 Staff deputed to watch stores/office in night.

2 Staff deputed to watch and work in stores/office

2.25 **Store Activities.**

Daily material transaction.

Maintenance of DBI/DBR/kachcha book

Preparing Balance return statement

Maintenance of Kerosine ,Diesel,Grease and fittings books & registers.

Issuing Uniforms for staff register

Cash imprest

Preparation of chellans & Gatepasses

Collection of materials from various Depots, with lorry/without lorry

DS-8

Books & Forms from GSD/PER

GJ, SEJ, Curved Switches, Trolleys, Rail dolley, Track items, Crow bar, Fish plates & Powerah etc. from EWS/AJJ

Indent preparation, Material Chasing, collection of materials, Issuing materials for day today work.

2.26 **Welding Materials with Accessories**

Blower for Thermit welding

Hydraulic trimmer

Disc cutting machine

Drilling machine

Grinding machine Power drills

Generators for power supply @ mid section for welding, Grinding, Drilling, Filing etc..

2.27 Rail Fractures/ Weld failures :-

Sl. No.	Year	No. of Rail Fractures	No. of Weld failures
1	2015	1	5
2	2016	6	3
3	2017	4	-
4	2018	2	3

2.28 **Outsourcing-Future Proposals**

Sl. No	Description of work	Proposal

1	TBM-CGL DN line CGL section CTR(P) of the existing 60 Kg Rail and PSC sleeper with new 60 Kg rail and 60 Kg sleeper with curve check rail arrangements-0.862 m in SSE/P.WAY/ CGL	1.Over UP line Km 58/950-59/400=0.451Km 2.Over Down line Km 71/596-72/616=1.020 Track Kilometre 3.Over UP & DOWN line Compound Wall at Km 41/275-45/580 &45/965-51/693 4.Over Down line Compound Wall at Km 61/00-67/900

CHAPTER – III

3.0 CRITICAL ANALYSIS

3.1 As per the Rational Formula, the activities to be done by gang staff (Track Maintainers) were identified and the activities which can be contracted out if necessary, were also identified. The activities of track maintenance are categorized as follows:

i) Primary Maintenance
ii) Auxiliary Maintenance
iii) Activities that can be contracted out.

3.2 **Primary Maintenance Activities**

a) Activities T (affected by traffic density)
b) Activities R Routine – not affected by traffic density.

Auxiliary Maintenance Activities

a) Activities M Miscellaneous

b) Activities S Site specific

- As referred in Para 0.25 of MCNTM Report, the Performance unit of ETKM (Equated Track kilometer) hitherto accepted, will be replaced as EMKM (Equated Manpower Kilometer). EMKM is defined as numerically equal to 0.6 times of the number of gang men required for the section for all the activities in TRMS as per rational formula.
- In future, ECKM (Equated Cost Kilometer) can be evolved based on the Rational Formulae as Performance unit for track maintenance cost.

- Whenever Annual review of gang strength for Activities `T` and `R` is undertaken, it is necessary to reassess the manpower requirement for activities `M` and `S` due to the developments effected from time to time in the fields of `M`& `S` such as:
- Number of monsoon patrol beats adjusted as per changed train service.

- Vulnerable locations eliminated due to works carried out.
- Level crossings replaced by ROB & RUB.
- No. of stores depots reduced.
- Jurisdiction of gang lengths reorganized.

The list is only indicative and not exhaustive.

3.3 **External factors:**

Certain external factors have also got a bearing on the man power requirements especially under R, M & S activities.

a. The improvements in road transport and vehicles

b. The improved availability of water, residence, etc.

c. The substitution of manual checking / testing / inspection due to the use of machines like USFD, WILD, etc.

d. The longevity ensured due to mechanized laying of track and construction / Inspection methods

e. The supervisory element of work in the contracts

Keeping in view of the objectives of MCNTM report which was evolved by studying the conditions existed during 1996-2000, when the concept of mechanization was in the initial stage, the Work study has made an attempt to commensurate with the technological improvements, as the MCNTM Report itself is issued way back in 2000, though implemented in 2006.

3.4 **Track Maintenance Activities**

The whole activities connected to Track Maintenance are clubbed under four main categories under MCNTM studies. They are:

Primary activities :-

Activity ‘T’ - Affected by Traffic Density

Activity ‘R’ - Not affected by Traffic Density

Auxiliary activities :-

Activity ‘M’ - Miscellaneous

Activity ‘S’ - Site specific

3.5 **Activity ‘T’ - Affected by Traffic Density**

T1- Slack attention to

a) Bad spots

b) Low joints (FP, welded, Glued joints)

c) SEJ

d) Minor curve alignment

T2 - For Tie Tamper working

a) Pre tamping operations

b) Along with tamper

c) Post tamping operations

T3- Casual Renewal of

a) Rails

b) Sleepers

c) Fasteners along with re-gauging

T4- Repair Welding

Man days requirement for T is decided as (80 + 2.3 GMT) (1 + A + B + C) per year per km and Man days for "T" will be 168 per year per km for non-suburban mechanized track and (115 + 2.3 GMT) (1 + A + B + C) for sub-urban mechanized track.

Where A = Formation factor

(0 for stable, 0.1 for bad and 0.2 for very bad soil).

B = Alignment factor (0 to 0.25 for 1° to 2° curves)

C = Rain fall factor (0 for 150-300 cm & 0.2 for 300 cm & above rain fall)

3.6 **Activity ' R ' – Not affected by Traffic Density**

R1 - Lubrication of ERCs

R2 - Shallow screening (1/5th of Length)

R3 - Loading, Leading, Unloading

R4 - Overhauling of LC gates

R5 - Watching of caution spots & misc.

R6 - Tree cutting for visibility

R7 - Lubrication of Rails in Curves

R8 - Accident Relief and carcass renewal in run over cases

R9 - Bridge, Sleeper attention & Renewal

R10 - Pre-monsoon attention such as clearing of drains and

Water ways, cess repair, de-weeding of track and attention to cuttings & Trolley refuges

R11 - Creep pulling approaches to bridges, turnout

R12 - Rectifying damage to LC posts and gates.

3.7 **Activity 'M' – Miscellaneous**

M1 - Monsoon patrolling $\sum$ (D x b x s x m) - 1 to N

N = No. of beat lengths

D = No. of days of M. Patrol in an year

b = No. of beats

s = No. of shifts

m = No. of men (1 normally, 2 as per DRM's special orders for areas affected with wild animals / terrorists.)

M2 - Hot weather patrolling

M3 - Cold weather patrolling

M4 - Watching vulnerable locations

M5 - Gate keeping of LC gates

M6 - Rest giving for key man

M7 - Water man duty

M8 - Store watch man duty

Activity 'S' – Site specific

S1 - Tunnel Maintenance

S2 - Bridge substructure maintenance

S3 - Long girder maintenance

S4 - Extra maintenance due to very steep curves, deep cutting, steep gradient

S5 - Maintenance of track on extremely bad formation

S6 - Look out man duty(for the safety of gang)

S7 - Fog signal man duty(to assist traffic Dept)

S8 - Filth removal from track(within city limits)

S9 - Security patrolling

S10 - Watching of water level in suburban section

3.8 **<u>The Rational formula categorized the following activities for contract works.</u>**

- Formation of treatment works.

- Collection of ballast Loading/unloading.
- Deep screening of ballast.
- Through Renewal of rails, sleepers, fasteners.
- Re-surfacing crossing and switch rails.
- Loading and unloading of P.Way materials in bulk.
- Heavy repairs to formation, bridges.
- Repairing Road surface of LCs.
- Removal of major sand breaches.
- Works arising due to restoration following freak accident.
- Cleaning of vegetation in Platform and in the vicinity of track, in yard and in workshops.

Based on the above Rational Formula the Gang strength requirement of SSE/P.Way/CGL is arrived as follows:

As per Railway Board Order No.95/CE1/GNS/2.Vol.II/Pt.11 dt.6.3.2006 – Item No.4).

$$\text{No. of Gang men} = \frac{\text{T+R+M+S Activities (in man days)}}{\text{Available man days per year (291)}}$$

One year	=	365 days.
Sundays	=	52 days.
National Holidays	=	12 days.
Casual leave	=	10 days.
Total No. of Holidays	=	74 days.
Available man days per year	=	365 – 74 = 291days.

3.9. It is also observed in TRMS manpower calculation that the following activities do not requires the arrived man power and some of the activities can be reduced and the man power will be right sized.

- The study MCNTM itself was conducted during the period 1996-2000 though the RB order was issued in 2006. There were sea changes in the maintenance of track; the committee report itself had advised that the norms are to be renewed according to the programme of Mechanized maintenance and at least once in 5 years.

- . The quantum of activity for the man power requirement for single line and multiple lines are linear in nature. The requirement of staff for tree cutting, painting, waterman etc are calculated on the same basis.
- The activities given for outsourcing is not accounted in TRMS calculations. The man days requirement assessed from the rational formula is on the higher side mainly because of the factors and activities not practically undertaken by the P.way units which are included in the formula.

- Also, certain activities have considerably reduced on account of system improvement and modernization. This certainly has a bearing on the 'R' factor in the rational formula. Similarly, most of the T and R activities are sourced out through contract works.

3.10 **'T' activities**

- The total claims for 'T' activities (track related) in TRMS is shown as 14372 man days. T1,T2,T3 activities are done in contract agreement. It is not coming under regular work. But the staff of gang in their area is doing minimum work if any.
- Moreover the sub activity T4 under 'T' has come down due to technological improvements in welding (T4- repair welding). During the last 4 years the weld failure/rail fracture both has 24 on an average of 6/ year in SSE/PWAY/CGL. Eventhough the above said activities are carried out by the contract agreement, the study team has taken 75% of the mandays into account considering the hard ship work nature .
- Hence, 10779 Mandays (14372*75/100) is considered for manpower calculation.

3.11 **'R' activities**

For R activities 16904 man days is given in TRMS calculation. It is observed that more than 50% of the activities are carried out through contract._

1. R6 Clearing of vegetation for improving the visibility at LC's is done by gang staff. Now a days mechanized grass cutters and other equipments are utilized to improve the quality of work and to reduce the hard labour and thereby reducing in the time /man days.

2. R8 is relating to accident relief and carcass removal etc., is reduced drastically and carried out when and where necessary . So, reduction of 50% is very reasonable in this case.

3. Similarly the requirement for Loading, Leading, and Unloading (R3), and Bridge sleeper attention and renewal (R9) is carried out by contract .

4. R10 is related to monsoon attention clearing of drains and water ways, cess repair, de-weeding of track, and attention to cutting and trolley refuge. Since the rain fall in this section is less and since this is a plain section with very few cuttings and trolley refuges a 50% reduction is very easily possible.

But workstudy team duly considering the emergency, timely work of the track maintainers ,the study team has reduced only 25% of the mandays from the mandays arrived by TRMS formula.75% of the mandays is taken in to the account from given TRMS.

Hence, 12678 Mandays (16904*75/100) is considered for manpower calculation.

3.12 **'M' activity**

a) Monsoon patrolling

This is coming under M1 activity

As per TRMS given is 9 beats and mandays 1098.

But, as per the data given by SSE/PWAY/CGL is 14 beats .

Based on the calculation for 14 beats , the arrived mandays is 1708 .It is claimed that there are 14 beats in this section and monsoon patrolling is carried out whenever necessary.

Now a days the average rain fall is drastically come down and the need for monsoon patrolling is reduced to a distinct level. Moreover , the average rain fall is considerably reduced in Tamilnadu over the years and the % of

drought is increased and the water level in all the bridges and rivers has come to lower level.

However, duly considering the need of this section and the **need of man power for other activities, 1708 mandays for 14 beats is recommended and allowed**

b) Hot/Cold weather patrolling – 3227+1291=4518 man days in TRMS

But, as per the record, the maximum and minimum temperature recorded in the section is 50 and 20. So, hot and cold weather patrolling is required to a minimum level only

Hence, **882mandays is allowed for Hot/Cold weather patrolling**

c**) Watching vulnerable locations**-112 man days is arrived in TRMS duly considering one location. While observing on field study it is looked after in three locations.

Hence, **366 man days is allowed for watching vulnerable locations.**

d) Gate keeping -14235 man days arrived in TRMS calculation.

It is calculated separately in para 3.20

e) RG for Key men-994 man days arrived in TRMS is allowed.

f) Store activity- 2190 man days is arrived in TRMS for two stores.

It is observed that there is only one store effectively functioning at the HQ. i.e at CGL and for which only **two store men** are deputed.

Duly considering other official works regarding store activity 1176 mandays i.e 4 men is allowed.

h) **Water man**

For water man post 2940 man days are allotted in TRMS which is equal to 10 posts. There is no need of keeping one water man for each gang because of the reduced no. of track staff, mechanized works and frequent movement of track machines in which water can be carried while work.

More over the gang length is situated in between the stations and gates. Water can be stored in containers and kept with them. The concept of water man is necessary only when the gang working together at a

particular place on a specific task like manual shallow screening, deep screening rail renewal, sleeper renewal etc., now a days most of the activities are mechanized and out sourced. **Hence the necessity for a separate water man for the entire year for each gang is fritter away.**

3.13 **Hence, the total requirement for 'M' activities is as follows**

Sl. No.	Activity	Man days required
1	Monsoon patrolling	1708
2	Hot/Cold weather patrolling	882
3	Watching vulnerable location	366
4	Gate keeping	Separately given*
5	RG for Key man	994
6	Water man	---
7	Store watch man	1176
	Total	**5126**

*** Gate keeping is dealt separately in Para.3.17**

3.14 **'S' activities**

a) Tunnel Maintenance- **No man days is arrived in TRMS**

b) Bridge sub structure maintenance**- 696 man days arrived in TRMS - allowed**

c) Long girder bridge maintenance **– No man days is arrived in TRMS**

d) Extra very sharp curve **– 409.25 man days is arrived in TRMS. 410 mandays is allowed.**

e) Extremely bad formation **– 2880 mandays i.e 10 men arrived in**

TRMS.

But, bad formations already exists were attended. At present there is no extremely bad formation in this section. Hence no mandays is required now.

But,Extremely bad formation is a critical task for Engineering Department which helps in smooth running of Rolling stocks. There are improved methods and Machines are available so as to minimize the burden and to be more effective than manual work.

It would be effective if the activity is carried out by the Track Machine with the support of Trackmen. Moreover this activity requires strenuous work and tools and equipments if done manually which costs more comparing to mechanized.

It is recommended to utilize mechanized process whenever possible for this activity .Eventhough no bad formation in this section at present and duly considering future conditions to support the activity 50% of the mandays arrived in TRMS is considered.

Hence, 1470 man days i-e 5 men is allowed for Extremely bad formation

f) Look out man duties-1071 man days arrived in TRMS –allowed

g) Fog signal - No man days is arrived in TRMS

h) **Filth removal -**2940 man days arrived in TRMS- This activity is in the gang's section area done by the gang staff and its everybodies responsibility to keep their area clean . So, No separate staff is required for this activity. **Mandays given in TRMS is not required.**

i) **Security Patrolling.- 1092 man days is arrived in TRMS-allowed**

3.15 **<u>The man days for all other 'S' activities are found justified.</u>**

Sl. No.	Activity	Man days required
1	Tunnel maintenance	---

2	Bridge sub structure maintenance	696
3	Long girder bridge maintenance	---
4	Extra very sharp curves	410
5	Extremely bad formation	1470
6	Lookout man duties	1071
7	Fog signal attention	---
8	Filth removal	--
9	Security patrolling	1092
Total man days		**4739**

Sum of the man days of T,R,M,S.

Sl. No.	Activity	Man days required
1	**'T'**	10779
2	**'R'**	12678
3	**'M'**	5126
4	**'S'**	4739
	Total man days	33322

3.16 **Requirement of Gang mate and Key men**

10 Gang sections are available at SSE/P. Way/CGL. Each gang section is supervised by one P. Way gang mate, allotted with one Key man. Hence, 10 Gang mates and 10 Key men are allowed on need base.

RG for 10 Gang Mate @1:6 = 1.66 say 2 (RG for Key man is already arrived in TRMS calculation)

Total =**22 men (10 gang mate + RG1.66+10 key man)**

Requirement of Track maintainers:

The Sum of TRMS as per study team is for SSE/PWay/CGL depot is 33335/291 = 114.5 say 115

No.of Mates & Key men = 22

Total = 115+22 = **137 MEN**

LR = 12.5 X **137**
100

LR = 17.

TOTAL = 137+17 = **154 MEN.**

3.17 Gate keeping activity is a part of 'M' activity (M5), 6570 mandays is shown in the TRMS calculation .

No. Of gates available.09 **(Spl- 5, B2-1,C-3,)**

Gate keepers requirement for 09 gates

Special class gates=5

5X3=15men

RG @ 16.66 for C Roster(15 men) =**2.5 say 3**

B2 and C Class gates=4

4X2=8 men

RG for E.I Roster = 3.2 say 4 men (168hrs/week X 4gates=1344 hrs/60 man hrs=11.2)

Total LR 30 for staff @ 12.5% =3.75 say 4 men

The grand total is 34 men

(But, as per TRMS calculation by division is 6570 .i.e 22.5 men for 8 gates. But, field study ,data given by SSE/PWAY/CGL, 9 gates available,7392 mandays i.e 25 men.)

Workstudy team allowed 34 men for Gate keeping with RG&LR duly considering the gate classification.

3.18 **Requirement of Trolley Man**

There are 4 trolleys(motor Trolly 1 , push Trolly 3) available with the SSE/ PWAY/CGL to carry out the regular track inspection and other track related activities. The trolley inspection details for the last one year 2017-2018 is given as,

SSE/P.Way/CGL (INCHARGE) = 48 days

SSE/P.Way/ Subsection /CGL =24 days

SSE/P.Way/GI =24days.

Altogether it comes around 96 days in a year trolley movement /inspection was carried out. On an average **8 days per month** the movement is carried out.

If the movement is planned nicely by duly coordinating with other supervisors, it will be effectively carried out by one trolley gang of 4 men.

However, duly considering the importance of the trolley inspection, two gang of trolley men is allowed. i.e. 8 **men is allowed.**

The idle time of trolley men can be utilized for other track related activities.

Total men required as per calculation by study team

Track maintenance=154 men

Gate keeping =34 men

Trolley inspection = 8 men

Total =196 men

3.19 **Note:**

In addition to that ,on need base the study team allows the following staff to manage the track activities without any interruption.

1.For Trainee reserve 2% of actual Track maintainer=4 men

2.For PME,CCL,Paternity leave,Maternity leave,Long absenteesm,material chasing=4 men

3.For assisting ADEN in site and office=4 men

The staff allowed in para 3.21 A Sl.No.1 &2 may be kept in office for miscellaneous/office work and utilize on exigencies.

On Need base staff allowed by Study Team=(para no. 3.19 Sl.no.1,2,3=12 Staff)

4.As per Sr.DEN/Co-ordn/MAS Lr.no.M/W.506/Track/South, dated-19.07.2016, SSE/PWAY/ACK section has been newly started and functioning. i-e From Km 80/000 To 125/000 (UP & DN Lines).

From Km 80/000 To Km 98/500 were in SSE/PWAY/ CGL section (with Staff working in these km)attached with SSE/PWAY/ACK section .

The staff already working in SSE/PWAY/CGL for the above said km are now working in SSE/PWAY/ACK .

Gang no 11,12,13 in CGL section are numbered as Gang no 01,02,03 in ACK section.(Km80/00-86/00,86/00-92/200,92/200-98/500) .(Staff are 10,12,6 men respectively.Total 28 men)

LC 70A,71,72 (3,3,3+1.Total 10 Gate keepers)

For office work and miscellaneous 7 men.

For trolley work 4 men

Senior Section Engineer 1

Grand Total=50 men are deputed at the time of SSE/PWAY/ACK newly created.

So, The study team Considered and subtract 49 men (Track maintainer,Gang mate,Key man,Gatekeeper,Trolley man) and 1 SSE (Total=50 Staff) from the surplus identified in this work study.

3.20 **Requirement of T. Mate, Gateman, Track maintainer, Trolleyman Sanction Vs Requirement**

Category	Sanction	Actual	Requirement	Surplus
Gateman/ G. Mate /key man Track maintainer – Gangs	295	198	188	**87-49=38**
Trolley man			8	
On Need base			12	
Total	**295**	**198**	**196 +12=208**	

3.23 **Requirement of Artizan Staff activities**

The manpower required for other activities are assessed on need basis is as follows:

Sl. No.	Designation	San.	Act.	Vac.	Req.	Excess	Remarks
1	Blacksmith Sr.Tech	**5**	1	**1**	**4**	**1**	Used for maintenance of LCs, Point, Crossings and other misc. works. --- 1*-Re-engagement scheme staff is working as painter.Not taken in account. --- 3* Trainee trackman not taken in account.
2	Blacksmith I		1				
3	Blacksmith II		--				
4.	Blacksmith III		2				
5	Welder	3	2	1	3	--	
6	Painter	2	1+1*	1	2	--	
7	Carpenter	1	1	--	1	--	
8	Trainee GK/Trackman	--	3*	-	--	--	
Total		11	8	3	10	**1**	

3.22 **Requirement of Supervisors & clerks**

At present 3 SSEs and 3 JE are working in the section. One SSE looking after over all supervision of the office and other track maintenance work. Another SSE is presently working at Sub section of CGL and 1 SSE is looking after the sub section at GI.

By duly considering the work load and various activities the existing **3 SSEs and 3 JEs are allowed .**

One O.S from division, one Senior Clerk from SSE/PWAY/CGL is working in this office to cater the need of Staff and Stores. The same may be allowed.

Sanction Vs Requirement (Supervisor & Clerical Staff)

Sl. No.	Designation	San.	Act.	Vac.	Req.	Surplus
1	SSE	11	3	8	3	8-1=7
2.	JE	5	3	2	3	2
3.	MINISTERIAL STAFF OS,SR.CLERK	2	2	-	2	-
TOTAL		**18**	**8**	**10**	**8**	**10-1=9**

3.23 **Summary for overall sanction vs Requirement**

SL.No	DESIGNATION	SANCTION	REQUIREMENT	SURPLUS
1	Track maintainer	295	196+12=208	87-49=38
2	Artizan staff	11	10	1
3	SSE	11	3	8-1=7
4	JE	5	3	2
5	Ministerial staff	2	2	0
TOTAL		324	226	98-50=48

Recommendation No.1

Thirty eight posts of **Track maintainer** in Pay Band Rs.5200-20200 G.P. 1800/-, is found excess to the requirement may be surrendered and credited to the vacancy Bank.

(38 posts)

Recommendation No.2

One vacant post of **Blacksmith - Gr.III** in Pay Band Rs.5200-20200 G.P. 1900/-, is found excess to the requirement may be surrendered and

credited to the vacancy Bank.

(1 post)

Recommendation No.3

Seven vacant posts of **SSE** in Pay Band Rs.9300-34800 G.P.4600/-, are found excess to the requirement may be surrendered and credited to the vacancy Bank.

(7posts)

Recommendation No.4

Two vacant posts of **JE** in Pay Band Rs.9300-34800 G.P.4200/-, are found excess to the requirement may be surrendered and credited to the vacancy Bank.

(2posts)

TOTAL (48 POSTS)

CHAPTER - IV

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

The work study draft report was handed over on 25.02.2019, to the Co-ordinating Officer to offer his remarks if any within 15 days.

A reminder was also sent on 14.03.2019 to offer his remarks at the earliest on 22.03.2019, but no remarks has been offered.

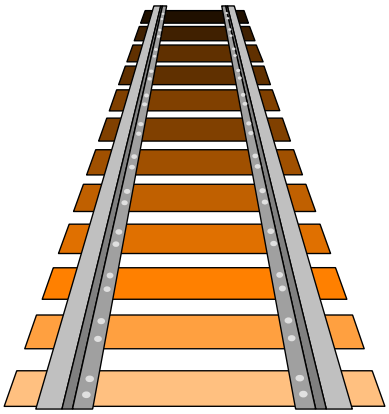
The remarks were not offered upto 02.05.2019. Hence, the work study report is released without the remarks of Co-ordinating Officer.

CHAPTER – V

5.0 FINANCIAL SAVINGS

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

Sl. No.	Category	No.of posts	Grade Pay (Rs.)	Money value (Rs.)	Annual Savings (Rs.)
1	Track Maintainer-IV	38	1800	41944	19,126,464
2	Blacksmith Gr-III	1	2000	50848	610176
3	SSE	7	4600	104888	8810592
4	JE	2	4200	82768	1986432
Total		**48**	**-**		**30,533,664**

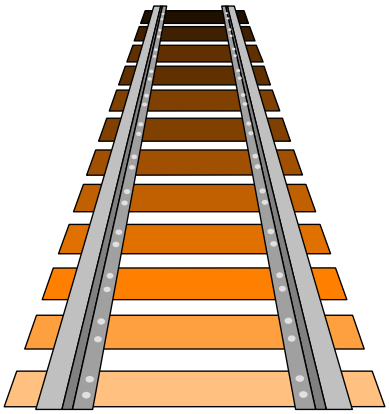


WORK STUDY TO REVIEW THE

STAFF STRENGH AT

SSE/P.WAY/ CGL

MAS- DIVISION



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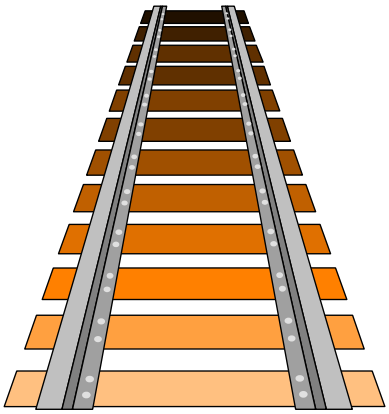

WORK STUDY TO REVIEW THE

STAFF STRENGH AT

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