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WORK STUDY TO REVIEW THE STAFF STRENGTH OF SSE/P.WAY/ATU SALEM DIVISION SOUTHERN RAILWAY

SOUTHERN RAILWAY

PLANNING BRANCH

G. 275 / WSSR-701920 / 2019-20

WORK STUDY TO REVIEW THE STAFF STRENGTH OF SSE/P.WAY/ATU SALEM DIVISION SOUTHERN RAILWAY

STUDIED BY

WORK STUDY TEAM
OF
PLANNING BRANCH

JUNE 2020

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(i)
ACKNOWLEDGEMENT

The work study team acknowledges its gratitude to Sr.DEN/Co-Ord/SA, ADEN/ATU (Co-ordinating Officer), SSE/P.WAY/ATU (Co-ordinating Supervisor) and all the staff working under SSE/P.WAY/ATU for their valuable inputs and guidance in conducting and completing the study in time.

(ii)
AUTHORITY

Annual programme of work studies, approved by SDGM for the year 2019-20.

(iii)
TERMS OF REFERENCE

To review the staff strength of SSE/P.WAY/ATU -Salem Division.

(iv)
METHODOLOGY

The following methodology has been adopted while conducting the study:

1) Collection of data
2) Discussion and interaction supervisors and staff of the unit.
3) Observation at Field Unit.
4) Applying MCNTM formulae (TRMS Data).
5) Referring KRCL system of Track Maintenance.
6) Applying CTE Circular for Artisans assessment and allowing other staff on need basis.

(V)

SUMMARY OF RECOMMENDATIONS

The following 26 posts are found excess to the requirement as per KRCL system of Track Maintenance. Division may initiate to implement KRCL System of Track Maintenance for this Unit as per CTE/MAS letters and following posts may be surrendered and credited to the vacancy bank **after implementation**.

Sl.No	Category	GP (Rs)	No of Posts
1	Jr.Clerk	2400	1
3	Track Maintainer Gr.III	1900	8
4	Track Maintainer Gr.IV	1800	17
Total			**26**

Total No. of Posts: 26

CHAPTER I

1.0 INTRODUCTION

1.1 Indian Railways is a transport & freight handling Organization, with social and welfare obligation. Thus, safe transport of men and material are top priority for our Organization.

1.2 Indian Railways is one of the longest rail networks in the world. It is transporting 20 million passengers and 2 million tons of freight daily over its 17 zones, which are subdivided into 67 divisions. Approximately 63,320 kms length of rail and 6909 railway stations are maintained over Indian Railways.

1.3 Among the 17 zones of Indian Railways, Southern Railway was formed on 14th April, 1957 by amalgamation of South India Railway, Madras; Southern Maratha Railway and Mysore State Railway. It covers over Tamilnadu, Kerala, Karnataka and Puducherry to the route kilometrage of 5081.

1.4 Engineering Branch is seen as Prime, among the various branches in Indian Railways, since this branch maintains Buildings, Bridges and Track. Track is the vital driving factor for Railway Transportation hence much is safety is being maintained.

1.5 The operating ratio of Southern Railway for the year 2018-19 is at 157.14% an improvement of 4 points from 161.14% from the year 2017-18. The total sanctioned staff strength of Southern Railways, as on 01.04.2019, was 1,02,417 with net vacancy of 18,831.

1.6 Modern Technological improvements in the structure of Permanent way, development of Composite Materials, Modern Testing Technologies and maintaining the Track with Heavy Machines have drastically reduced the work load of Field Technician in the Permanent Way laying as well as maintenance. Various activities involved in laying, re-laying and scheduled maintenance are being outsourced in Permanent Way. Accordingly, providing optimum man power by considering all the above factors, will reduce the staff cost by which the efficiency of the zone can be improved.

1.7 The committee on restructuring railways had observed that the expenditure on staff is extremely high and unmanageable. This expense is not under the control of Railway and keeps increasing. It has also been observed that the employee cost is the major key component that reduces the Railways ability to generate surplus.

1.8 This study is pertaining to SSE/P.WAY/ATU Unit in Salem Division.

1.9 The optimum man power utilization is an important factor for enhancing the productivity / operation ratio. RITES is also emphasised to conduct regular work studies to rightsize the manpower and to justify the available Man Power on Zero base budgeting.

1.10 Keeping the above aspects in view, the work study team has made an attempt to study the present system of working at SSE/P.WAY/ATU Unit, through means of reducing cost and right sizing the work force and further growth of Technology, the work load vs requirement of staff is critically examined in the ensuing chapters.

CHAPTER II

2.0 PRESENT SCENARIO

2.1 Southern Railway has six (6) Divisions namely MAS, MDU, TPJ, PGT, TVC & SA. P.Way under Engineering Department of SA Division is functioning under the overall control of Sr.DEN/Co-ord/SA, assisted by DENs, ADENs, SSEs and Supervisors in extending Co-operation for smooth and efficient functioning of the Department with sub Division/units/sections.

SSE/P.WAY/ATU is In-charge SSE for this section.

2.2 LOCATION OF THE OFFICE OF SSE/P.WAY/ATU:

Office of the **SSE/P.WAY/ATU** is located within the office premises of ADEN/ATU.

2.3 JURISDICTION OF THE SSE/P.WAY/ATU SECTION:

Jurisdiction of SSE/P.WAY/ATU is from SAMT (excl) to TVS stations.

2.4 STAFF STRENGTH:

The total sanction is 151 including SSEs/JEs and Ministerial staff as per DPO/SA's Sanction, Actual, Vacancy and Excess statement dated 28.11.2019 and as per SSE/PW/ATU's scale check statement dated 10.02.2020 sanction is 134 and actual is shown as 141 (excluding course completed act apprentice) as on 10.02.2020.

The details of the Sanction, Actual, Vacancy and Excess are given in **Annexure – I.**

2.5 TOTAL MAN-DAYS SERVICE BY A STAFF IN A YEAR:

No. of days per year	=	365
Less Deduction		
CL	=	10
National Holidays	=	9
Rest/Sundays	=	52
Sub-Total	=	**71**
Net Man days available per year	**=**	**294 Working Days.**

2.6 **ORGNISATIONAL SETUP:**

Sr.DEN/Co-Ord./SA
DEN/SA
ADEN/ATU
SSE/P.WAY/ATU
SEs & JEs/P.WAY/ATU
Min.Staff, Mates, Keyman, Track Maintainers, GKs, Ancl.Techs.

2.7 **ROUTE KILOMETRES OF THE UNIT:**

This Unit covers total route kilometres of 69.70. Section wise route kms is as shown below:

S.No.	*Section*	*Km.*		*Total Kms*
		From	*To*	
1	SAMT(excl) -TVS	191.000	122.000	69.000
2	Between ATU-ETP	141A/700	141A/000	00.700
			Total Kms.	**69.700**

2.8 The entire length of this section is an absolute block system, single line operating system. The track structure is 52 KG 90 UTS, M+7 Sleepers Density in this Section.

2.9 **UTILISATION OF THE SECTION:**

According to Salem Division Working Time Table No.12, utilization of line capacity for the year 2018-19 in this Section is 86 %.

2.10 **TRAFFIC DENSITY:**

Traffic Density of this section in terms of GMT is 2.11.

2.11 **MAXIMUM SPEED OF THE SECTION:**

Maximum speed in this section, 80 Kmph for Passenger Trains, 75 Kmph for Goods Trains and 60 Kmph for CC6/8+2t loaded goods trains.

2.12 The following 8 stations are coming under the jurisdiction of SSE/P.WAY/ATU are:

1. TALAIVASAL H - TVS @ 122.54 Km.
2. ATTUR - ATU @ 140.32 Km.
3. PEDDANAYAKKANPALAIYAM H.-PDKM - @ 151.70 Km.
4. ETTAPUR ROAD - ETP @ 155.99 Km.
5. VALAPPADI GATE H. - VGE @ 163.07 Km.
6. MINNAMPALLI - MPLI @ 176.41 Km.
7. AYODHYAPATTANAM - APN @ 316.28 Km.
8. SALEM TOWN - SXT @ 190.30 Km.

2.13 **RUNNING LINES IN THIS SECTION:**

There are Fifteen Running Lines as below:

S.No.	Station	Running Line		Total
		Main	Loop	
1	SXT	1	2	3
2	MPLI	1	3	4
3	ETP	1	3	4
4	ATU	1	3	4
			Total	**15**

2.14 **DETAILS OF THE GANGS IN THIS SECTION:**

There are 11 Gangs maintaining in this section of 69.70 kms. Details of the gangs and its jurisdiction is enlisted as below:

Gang No.	Place	From	To	Length in Km.	Strength
1	TVS	122/000	129/000	7.000	16
2	KTKT	129/000	135/000	6.000	11

3	ATU	135/000	140/600	5.600	10
4	ATU	140/600	146/600	6.700	16
5	PDKM	146/600	153/000	6.400	7
6	ETP	153/000	159/000	6.000	14
7	VGE	159/000	166/000	7.000	16
8	SNVD	166/000	173/000	7.000	4
9	MPLI	173/000	179/000	6.000	6
10	APN	179/000	186/000	7.000	21
11	SXT	186.000	191/000	5.000	10

2.15 **DETAILS OF WELDING IN THIS SECTION:**

AT Welding Techniques are being used in this section.

2.16 **UTILISATION OF TRACK MAINTAINERS:**

Track maintainers are utilised as Gang Mate, Key Man, Gang Man, Gate Keeper, Trolley Man and Store Watch Man. There are no colony Gang Man in this section.

2.17 **CURVE DETAILS OF THE SECTION:**

There are 19 number of curves are available in this section. The degree of curve varies from 0.5 ° to 3 °.

2.18 Ruling Gradient in this section is 1 in 100.

2.19 **DETAILS OF RAIL FRACTURE AND WELD FRACTURES:**

There are 0 rail fractures and 3 weld failures in this section for the 8 years as enlisted below:

SL.NO.	**YEAR**	**No. OF RAIL FRACTURE**	**No. OF WELD FAILURES**	**TOTAL**
1	2012-13	0	0	0
2	2013-14	0	1	1

3	2014-15	0	0	0
4	2015-16	0	0	0
5	2016-17	0	1	1
6	2017-18	0	1	1
7	2018-19	0	0	0
8	2019-20	0	0	0
TOTAL		**0**	**3**	**3**

2.20 **DETAILS OF POINTS AND CROSSINGS:**

There are 42 Points and Crossings in this section, abstract is given below.

POINTS AND CROSSING DETAILS IN SSE/PW/ATU SECTION						
Sl.NO	**STATION**	**1 IN 8.5**	**1 IN 12**	**1 IN 16**	**TRAP**	**TOTAL**
1	ATU	4	8	-	-	12
2	ETP	2	7	-	1	10
3	MPLI	5	5	-	2	12
4	SXT	-	4	4	-	8
TOTAL		**11**	**24**	**4**	**3**	**42**

2.21 There are 16 Long Weld Rails in this section having length of 72.117 Kms.

2.22 There are 9 major and 170 minor bridges available in this section.

2.23 There are 6 RUBs, 3 ROBs and 2 FOBs in this section.

2.24 There are 5 vulnerable locations in this section.

2.25 LEVEL CROSSING DETAILS OF THIS SECTION:

There are 29 number of Level Crossings in this section, of them, 23 are manned by the Engineering staff. Details of the Level Crossing Gates are given below:

LEVEL CROSSING DETAILS IN SSE/PW/ATU SECTION					
SL. NO.	**LEVEL CROSSING NO.**	**LOCATION**	**BETWEEN STATIONS**	***CLASS***	**TVU**
1	121	125/300-400	CHSM-ATU	C	7370
2	122	125/900-126/000	CHSM-ATU	C	5740
3	124	128/000-100	CHSM-ATU	C	11990
4	126	129/800-900	CHSM-ATU	C	9160
5	128	133/000-100	CHSM-ATU	B	21180
6	131	139/100-200	CHSM-ATU	SPL	191780
7	136	142/200-300	ATU-ETP	A	43195
8	137	143/300-400	ATU-ETP	C	6670
9	145	151/600-700	ATU-ETP	C	6575
10	149	154/800-900	ATU-ETP	C	11875
11	152	157/900-158/000	ETP-MPLI	C	8065
12	153	159/700-800	ETP-MPLI	C	8820
13	154	160/800-900	ETP-MPLI	C	4360
14	156	163/000-100	ETP-MPLI	A	41780
15	159	164/600-700	ETP-MPLI	SPL	102338
16	167	178/000-100	MPLI-SXT	C	14545
17	169	182/200-300	MPLI-SXT	SPL	182530
18	171	183/200-300	MPLI-SXT	C	9120
19	173	184/000-100	MPLI-SXT	C	6745
20	175	184/900-185/000	MPLI-SXT	C	135525
21	176	185/600-700	MPLI-SXT	SPL	67510

22	178	186/900-187/000	MPLI-SXT	C	28827
23	179	187/100-200	MPLI-SXT	A	34710

2.26 **TROLLEY MOVEMENT:**

There are 5 number of Trolleys under this section as below:

Sl.No.	Type of Trolleys	No.of Trolleys
1	Push Trolley	3
2	Moped Trolley	1
3	Motor Trolley	1
	TOTAL	**5**

Push Trolley for this section from 01.01.2019 to 31.12.2019 (i.e.12 months) is as below:

S.No.	SSE/JE	No. of Trolley Movements	Trolley movement p.m
1	SSE/PW/ATU	50	4.17
2	SSE/PW/ATU/SS	30	2.50
3	SSE/PW/SXT	30	2.50
4	ADEN/ATU	25	2.08
	Total	**135**	**Ave.2.81**

On an average, 2.81 trolleys have been moved for Inspections and other works.

2.27 **TEMPERATURE RECORDED IN THE SECTION AREA:**

S.No.	Year	Min Temp ° c	Max Temp ° c	Average Temp
1	2017	19	59	33.92
2	2018	19	55	36.84
3	2019	20	56	34.04
			Average temperature over 3 yrs.	**34.93**

Note: The actual de-stressed executed temperature of track is about 36 ° c to 43 ° c. (for Zone III suggested is 40 ° c).

2.28 PRESENT STAFF DEPLOYMENT IN THIS SECTION:

The total sanctioned strength of this Unit is 151 as on 23.09.2019, actual being 141 and net vacant is 10. (The Scale Check Statement is placed as **Annexure I**).

S.No.	Category	Actual
1	SSE/JE	3
2	Artizan Staff	3
3	Track Maintainers (Track Mate, Key Man, Trolley Man, Gate Keepers, Store Watchman, Office Assistant & Maintainers + Act.APP 07)	133
4	Ministerial Staff	2
	Total	**141**

2.29 THE DUTIES OF SUPERVISORS AND TECHNICAL STAFF IN P.WAY SECTION:

2.29.1 Duties of SSE/P.Way (as prescribed in para 118-135 of Part-B of IRPWM)

- Maintenance and inspection of track in a satisfactory and safe condition for traffic.
- Efficient execution of all works incidental to track maintenance including track relaying works.
- Accountal and periodical verification of stores and tools in his charge.
- Maintenance of land boundaries between stations and at unimportant stations as may be specified by the administration.
- Every Permanent Way Inspector shall have in his possession up-to-date copies of the following codes and manuals with all correction slips up-to-date.
- Co-ordination with the Works, Bridge, Signalling and Electrical Staff, when they are required to work jointly.
- The Permanent Way Inspector shall see to the security of rails, chairs, sleepers and other materials in his charge and ensure that unused materials are stacked properly clear of the line, so as not to interfere with the safe running of trains.

- When PWI accompanies a periodical or special inspection by the higher officials he should have registers and documents pertaining to his section.
- Testing of Running qualities of track.
- Inspection of Gangs, Level Crossings, Points and X-ings, Curve Inspection.
- Foot Plate Inspection, Rear vehicle Inspection, Foot Inspection.
- Accompanying OMS/TRC (RDSO) Inspection.
- Check on patrolling.
- Maintenance of station yards.
- Witnessing payment to staff.
- 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 scrap delivery (DS8).

2.29.2 Duties of JE/P.Way (as prescribed in para 136-145 of Part-B of 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 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 X-ings, Curves, foot plate inspection, rear vehicle inspection and foot inspection.

2.29.3 Duties of P.Way Mistry/ Track Mate (as prescribed in para 146-166 of Part-B of IRPWM)

- Knowledge of Rules and Signal.
- Safety of the Track.
- Equipments at site of work.
- Muster and Gang Charts/Diary Book.

- 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 P&T staff.
- Assistance in protection of train and Assistance in placing fog signals.
- Responsibilities of the mate in LWR track.

2.29.4 *Duties of Key man (as prescribed in para 167-170 of Part-B of 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.

2.30 **TRACK MAINTENANCE METHODS:**

2.30.1 The para 228 of IRPWM prescribes the system of maintenance for concrete sleeper track as given below. The following *3-tier system of track*

maintenance shall be adopted on sections nominated for mechanized maintenance.

1. On track machines (OMU).
2. Mobile Maintenance unit (MMU).
3. Sectional gangs.

2.30.2 The para 228 of IRPWM prescribes the system of maintenance for concrete sleeper track as given below. The following 3-tier system of track maintenance shall be adopted on sections nominated for mechanized maintenance. *mobile maintenance units* shall comprise of two groups:-

MMU-1:- One for each PWI section

MMU-2:- One for each Sub-division

MMU-1 shall be a Rail cum road vehicle with a PWI in-charge with a jurisdiction of 40-50Km. double line and 90-100Km for single line for various works including need based spot tamping and in situ rail welding.

MMU-2 shall be a road vehicle based unit with each sub-division for reconditioning of turnout and minor repairs to the equipment of MMU.

2.30.3 **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

ii. Conventional system of maintenance

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

i. Only conventional system of maintenance is being used.

2.30.4 **ANNUAL PROGRAMMED REGULAR TRACK MAINTENANCE:**

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.

2.30.5 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.

2.30.6 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 speed of maintenance

The need to carry out the maintenance works within the constraints of time for line block etc.,

2.30.7 **THE PROVISIONS OF "SMALL TRACK MACHINES MANUAL":**

The para1.3.2 says that the "Requirement of Manpower doesn't includes Leave Reserve" Further, the para1.3.3 stipulates that the Creation of posts for Operation and maintenance of small track machines should be done by Surrender of equivalent money value of live revenue charged posts of Gangman /other category involved in the track maintenance. The component of unskilled staff being created should be barest minimum. The proportion of skilled personnel should form at least 75% of the total posts to be created.

2.30.8 **VARIOUS TRACK MACHINES AND THEIR PERIODICITY OF WORKING IS DETAILED BELOW**:

Sl. No.	**Name of the Machine**	**Work Done**	**Frequency**
1	BCM- Ballast Cleaning Machine	Deep Screening of Track	Once in 10 years
2	DUOMAT/CSM- Continuous Action Tamper	Tie Tamping LWR Work	Once in 2 years

3	DGS- Dynamic Track Stabiliser	For consolidating track after works affects core stability	Once in 10 years along with BCM
4	UNIMAT/MPT	Tamping points & crossings	Once in 2 years
5	BRM- Ballast Regulating Machine	Boxing of track	
6	UTV- Utility Track Vehicle	Loading & Stacking materials	As per need
7	T-28- T28 Cranes- One job crane (PRC laying Machine)	For re-laying of Points & Crossings	As per requirement
8	PQRS	For re-laying track	-do-
9	TRT	For CTR of track	-do-

2.31 **ACTUAL GANG PERFORMANCE:**

The various gangs daily performance diaries were observed and noticed the following works are repeatedly allotted by the Supervisor and carried out by the Gangs are;

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.

2.32 **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.

IR adopted various efforts to standardize in the past.

1	Maflin formula	1931
2	Lobo committee or modified Maflin formula	1959
3	Modified Maflin formula freezed	1965
4	Committee Report I	1971
5	Committee Report II No action taken on (4) & (5)	1972
6	Appointment of special committee	1976
7	Submission of Report by Spl. Committee Though Rly. Board did not give any direct clearance for this formula of 1979; it was implemented with a 5% reduction in many Zones.	1979
8	Committee for machine and manpower Deployment for Track Maintenance appointed (Not accepted by Rly.Board)	1989
9	(CMMDTM) Report submitted	1995
10	Kapoor committee appointed	05.01.1996
11	Reconstituted committee	12.11.1997
12	Renamed as CMCNTM – Committee for Man power and Cost Norms for Track Maintenance	13.08.199
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 which arrives to calculate the required Gang strength.

2.33 **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:

Activity 'T' - Affected by Traffic Density
Activity 'R' - Not affected by Traffic Density } Primary activities

Activity 'M' - Miscellaneous
Activity 'S' - Site specific } Auxiliary activities

2.33.1 **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 re-gauging

T_4 - Repair Welding

2.33.2 **Activity 'R' (Un-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 renewal 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.

2.33.3 **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

2.33.4 **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

2.34 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 by deploying BCM in which case man power is provided by the contractor.

4. Introduction of sub ballast and ballast layers. Heavy repairs to track, including lifting.

5. Complete realignment of curved track. Through renewal of rails, Sleepers and fosterers.

6. Complete renewal of points and crossings, SEJs, traps etc.

7. Resurfacing of crossings and switch rails.

8. Loading and unloading of P-Way materials is bulk.

9. Loading out of P-Way materials for other than casual renewal.

10. Security of materials kin a depot which is closed and locked. Painting of Rails and weld collars.

11. Painting of bridge girders.

12. Heavy repairs (Measurable) to formation cutting bides drains and catch water

13. Heavy repairs (measurable) to bridges, bridge protection works, river training works and tunnels.

14. Providing (Repairing road surface at level crossings including speed, breakers.

15. Removal of major sand breaches.

16. Works arising due to restoration following breach or accident.

17. 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 departments.

2.35 TRACK MAINTENANCE SYSTEM OF KONKAN RAILWAY:

Konkan Railway Corporation Limited has introduced III Tier Track Maintenance System, which has been proved to economical and reliable in maintenance in the railways. Railway Board has directed all the Zonal Railways to introduce the KRCL system of Track Maintenance in some of the ADEN sections (having less than 10 GMT) on trial basis. Accordingly, PCE/MAS has instructed to make conversant and familiarize the KRCL System of Track Maintenance in ADEN/ATU sub-division consisting of CHSM, ATU and NMKL sections of Salem Division and ADEN/KKDI sub-division consisting of PDKT, SVGA and MMM sections of MDU Division, vide Letter No.W.506/14/Track Maintenance dated 08.01.2018 and 29.03.2018. It has been further reiterated vide Letter No.W/506/14/KRCL dated 19.01.2018 and 05.07.2018.

The nutshell of the KRCL system of Track Maintenance can be broadly divided into distinct tiers as:

a. Top Tier
b. Middle Tier
c. Bottom Tier

a. TOP TIER:

On KRCL, for 750 km of main line Track 3 CSM, 2 UNIMAT, 1 DTS, 1 BRM, 1 UTV and BCM are in force for maintaining.

b. MIDDLE TIER:

1 Mobile Maintenance Gang (MMG) with a Rail Maintenance Van (RMV-self propelled Rail Mounted Vehicle) headed by a JE available under each SSE for a jurisdiction of 60-70 kms. The MMG comprises of 6 multi-skilled Men (MSM) and 4 Track Man. MSM are trained to drive RMV, attend weld fractures besides regular Track Maintenance. Depending upon requirement of work, additional man power is provided through Zonal P.way contract. The staff in this gang are trained in Multi Skill activity and carryout following jobs:

- Repair to Rail/Weld fracture including AT welding
- Adjustment to SEJ gaps
- Replacement of switches and crossing components
- Spot renewal of Rail and Sleepers
- Tamping of few sleepers with off-track tampers
- Driving of Rail Maintenance Van.

c. BOTTOM TIER:

Under each JE, a sectional gang carries out maintenance works for a track length of 30-40 kms with gang strength of 12 Track Men. The sectional gang with tools moves over the entire jurisdiction of JE using the pickup van (Road Vehicle) and attends isolated spots with off-track tampers. The gang attend one or two spots every day like attention to Bridge approaches, switch expansion joint, transition portion of curve etc.

The overall expenditure on maintenance of track on Konkan Railway works out about Rs.9-10 lakhs/Route km/year.

CHAPTER III

3.0 CRITICAL ANALYSIS

GENERAL ANALYSIS:

Rightsizing of Man Power in Railways is an ongoing process and it is being done after assessment by Planning Branches of concerned Divisions, Departments and by the specialized common branch under SDGM. Railway Board is fixing the annual target for surrender of posts for every zone. Technological improvements, computerization, investments in modernization, improved skills and training and even certain external factors like availability of competitive and quality products from outside, improvement and economy in outsourcing, transport etc help to achieve a better man power ratio. The productivity per employee calls for a work force which is optimum for the requirement. The ground realities are given due consideration during the review of staff strength.

Regards to Track maintenance, Railway Board has stipulated the yard stick and guideline for manpower assessment in the form of MCNTM formula through software. This formula will ensure Zero base review as per the actual traffic and other related conditions to arrive at the optimum staff requirement. The committee has also recommended certain activities for outsourcing.

3.1 The Data applied for 'MCNTM' formula:

Sl. No.	Detail	Division/ MCNTM Data	Remarks/ Corrections
1	Total Section length Kms	69.70	-
2	Total Section length on LWR Kms	69.70	-
3	Equalant PRC track length Kms	73.62	-
4	Total Track length Kms	73.62	
5	GMT	2.11	-
6	Rain fall (Cms)	94.51	-
7	Length required for Hot patrolling	69.70	Not done
8	Length required for Cold patrolling	69.70	-
9	No. of EQ turn-outs in mainline	39.20	-
10	No. of EQ turn-outs on PRC Sleepers	39.20	-
11	Running yard line – machine packed	6.29	-
12	Running yard line – manually packed	2.72	-
13	Running Yard Line on PRC Sleeper	6.289	-

14	Non-Running yard line manually packed	0.90	-
15	No. of EQ turn-outs in RYL	53.20	-
16	No. of EQ turn-outs in NRYL	6.0	-
17	No. Gangs	11	-
18	Beat length of the gangs in KMs	69.00	-
19	No. mates	11	-
20	No. Key men	11	-
21	Man days Required for **RG** to key man	781.00	-
22	Man days Required for look out	244.93	-
23	Man days Required for Waterman	3234.00	Nil
24	Filth affected gangs	0	6
25	Man days Required for filth removal	nil	1440
26	No. of Curve	19	-
27	Curve Segment length kms.	10.101	10.370
28	LC Gates	23	-
29	No. of shifts	2	-
30	Gatemen Sanction	40	Nil. Clubbed with TM.
31	Man days for Gate keeping	5030.00	16790.00
32	No. of Track on LC	1	-
33	No. of Bridges	179	-
34	No. of steel girder Bridges	Nil	-
35	Man days Required for Substructure	190.12	-
36	No. of Tunnel	Nil	-
37	No. of Extremely bad formation	5	-
38	Length of bad formation in (Mts)	5000.00	-
39	Man days for Extremely bad formation	3000.00	-
40	No. of beats in Monsoon patrolling	9	-
41	No. of shifts	2	-
42	Beat infested with wild animals	No	-
43	Monsoon Patrolling days	45	-
44	Man days for beat patrolling	810	-
45	Vulnerable locations	5	-
46	Vulnerable Patrolling days	45	-
47	Man days Vulnerable locations	450	-
48	No. of site stores	2	-

49	Man days Required for (**Stores Watchman)**	2190	-
50	Man days for Security patrolling- Man days	200	-
51	Fog signal man days	240	-
52	Long girder bridge maintenance	-	800

3.2 **The following output obtained through MCNTM formulae with updated data:**

3.2.1 **Activity 'T' – affected by the Traffic Density (Excluding correction of shallow screening):** *T = (80 + 2.3 * GMT) (1+A+B+C) L*

= (80+2.3*2.11) (1.0128956) * 73.62

Sl.No.	Line Segment	GMT	Track Km.	Composite Factor	Mandays
1	SAMT-TVS	2.11	73.62	1.0128956	6327.44
Total Man days per year for T activities					**6327.44**

3.2.2 **Activity 'R' Un affected by the Traffic Density:**

The total manpower required to carryout the 12 types of 'R' activities is 159 mandays per km per annum and mandays required for Non Running Yard Lines & Turnouts.

Sl.No.	*Line Segment*	*Track Km.*	*Mandays reqd for 12 types of R Activities*	*Mandays reqd for NRYL & Turnouts*	*Toal Mandays for Activity 'R'*
1	*SAMT-TVS*	*73.62*	*11705.58*	*3350.643*	*15056.22*
Total Man days per year for R activities					***15056.22***

3.2.3 **Activity 'M' – Miscellaneous:**

Total man days required for 'M' activities - **25091.40** man days/year.

3.2.4 **Activity 'S' – Site Specific:**

Total man days required for 'S' activities – **4095.05** man days/year.

3.2.5 **TOTAL MAN DAYS CALCULATED/YEAR:**

Activity	Man days/Year
T	6327.44
R	15056.22
M	25091.40
S	4095.05
Total	**50570.11**

(Updated Calculation sheet abstract of TRMS is Annexxure- II)

3.2.6 **DISALLOWED MAN DAYS:**

MCNTM Formula is inclusive of all TRMS Activities. However, the Division has calculated the total man-days requirement as 43333.48 (excluded of 40 Gatemen). Work study team has evaluated TRMS data as 50570.11 mandays/year inclusive of Gate Keepers with Track Maintainers.

Based upon the field inspection and study, it is understood that some of the activities are not being done regularly by the Gang staff and some activities which are not allotted mandays in the MCNTM are being performed in this section. Hence, such activities are considered to the extent of actual staff deployment while evaluating the man power by scoring out, according to the work load.

The following activities are altered to suit the present level of requirement.

DISALLOWED MAN DAYS		
Activity	**Man Days Proportion +/- Actual**	**Disallowed Man Days**
R2: Shallow Screening (Not required for Machine Maintenance)	55/159 th part of R (15056.22)	5208.13

M7: Water Man Duty. (Not required for the present situation)	-	3528.00
Total evaluated Man days to be deducted		**8736.13**
ADDITIONAL MANDAYS ON NEED BASIS		
S3: Long Girder Maintenance.	-	800.00
S8: Filth Removal from Track	-	1440.00
Total evaluated Man days to be added		**2240.00**

3.3 **GANG STRENGTH REQUIREMENT:**

3.3.1 **THE ACTUAL EVALUATED TRMS CALCUATION FOR MAN POWER CALCUATION:**

A	**The Total Evaluated TRMS**	**50570.11**
B	**Total evaluated Man days to be added**	**2240.00**
SUB-TOTAL (A+B)		**52810.11**
C	**The Total Evaluated Disallowed Man Days to be scored out**	**-8736.13**
The Actual Evaluated TRMS for Man Days= (A+B)-C **= 52810.11-8736.13= 44073.98 Mandays**		

3.3.2 **GANG STRENGTH:**

Gang Strength is calculated as below

Gang Strength = The Actual Evaluated TRMS for Man Days/ 294

44073.98/294= 149.91 Men

Say **150** Men

Total Gang Staff (Track Maintainer

+ Gate Keeper + Store Watchman) = **<u>150 Men</u>**

3.3.3 **GANG MATE AND KEY MAN:**

There are 11 Gangs. One Gang Mate and One Key Man are required for a gang.

Gang Mate and Key Man required = 22 Men

3.3.4 **REQUIREMENT OF TROLLEY MEN:**

This section has 03 push type, 01 moped type and 01 motor type trolleys for scheduled and other inspections. The total running kilometer of this section is 69.70, which are manned by 3 supervisors. The total monthly inspection conducted by the supervisors is 2.81 p.m. in general.

TROLLEY INSPECTION SCHEDULE:

SSE/P.Way (in charge) – once in a month (CS No.132 Para 124(a), Dt.: 08.04.2013)

SSE/JE (section in charge) – once in a fortnight (CS No.132 Para 139, Dt.: 08.04.2012)

For the movements of a pushing trolley two person are required in which, two will physically push the trolley and the other two is sitting and watching back side of the movement on safety view. For Push Trolley Batch four persons are required.

For the movement of Motor Trolley One person is required to operate the trolley and One more to assist him. For Motor Trolley Batch two persons are required.

On need basis, **2 Batches for Push trolley and 1 Batch for Motor Trolley** will meet the requirement.

The total required no. of Trolley men = 10 men.

3.3.5 **TOTAL TRACK MAN REQUIREMENT:**

Category	**No. of Men Required**
Gang Staff (Track Maintainer, GK & Store Watchman)	150
Gang Mate & Key Man	22
Trolley man	10
TOTAL TRACK MAN REQUIRED	**182**

3.4 **REQUIREMENT OF ARTIZAN STAFF:**

Based upon CTE Lr.No.W.OM/45/Post/General dated 26.11.2009, requirement of artisan staff is calculated as below:

Sl. No.	Category	Requirement	Remarks
1	Blacksmith	2	2 no.s for each sse
2	Blacksmith Helper	2	
5	Brick layer khalasi	1	1 each for sub-divn.
3	Painter	1	One per section supervisor
4	Welder	1	One per section supervisor
5	Helper welder	1	One per section supervisor
Total		**8 Men**	

On need basis, work study allows the Artizan staff - 8 Men.

3.5 **REQUIREMENT OF SUPERVISORS:**

SSE/In charge : 1

SSE/JE Sub-Section Supervisors : 2

Total : 3

This section is divided into 2 sub-sections. (ATU & SXT)

On need basis, Work study teams allows the current actual strength of SSE/JE - 3 Men.

3.6 **MINISTERIAL STAFF:**

At present, there are two ministerial staff (01 OS/PB in GP 4200 & 01 Jr.Clerk in GP 2400) are looking after the staff personal matters and other allied issues, this work study allows the sanctioned strength to continue, on need basis. Hence the additional strength may be utilized to the needful area.

No. of Ministerial staff required - 1 Men.

3.7 TOTAL COMPOSITE STAFF REQUIREMENT OF SSE/P.WAY/ATU:

Categories	Reference Paragragh	Staff
Track Maintainers	(3.3.2)	150
Gang Mate & Key Man	(3.3.3)	22
Trolley Man	(3.3.4)	10
	Sub Total	182
	LR @12.5% for 182 Men	23
Artizans	(3.4)	8
Supervisors	(3.5)	3
Ministerial Staff	(3.6)	1
	Total	**217**

TOTAL STAFF REQUIREMENT IS 217.

3.8 TOTAL STAFF SANCTION VS REQUIREMENT OF SSE/P.WAY/ATU:

COMPOSITE SANCION VS REQUIREMENT						
Category	**Level**	**GP (Rs.)**	**Sanction**	**Actual**	**Reqd.**	**Surplus**
SSE	7	4600	3	3	2	1
JE	6	4200	1	0	1	0
OS/PB	7	4200	0	1	0	0
Jr.Clerk	4	2400	1	1	1	0
Carpenter/Sr.Tech	6	4200	1	0	0	1
Blacksmith- HS I	5	2800	1	1	2	*1
Blacksmith Helper	1	1800	1	0	2	*1
Brick layer kh	1	1800	0	0	1	*1

Painter-I	5	2800	1	0	1	0
Painter- III	2	1900	0	1	0	0
Welder	4	2400	0	0	1	*1
Welder-Helper	1	1800	1	0	1	0
STM Helper/Gr.III	2	1900	0	1	0	0
Track Maintainer Gr.I	5	2800	10	8	21	*11
Track Maintainer Gr.II	4	2400	18	10	41	*23
Track Maintainer Gr.III	2	1900	34	21	41	*7
Track Maintainer Gr.IV	1	1800	79	94	102	*23
Act. App	1	1800	0	7	0	0
		Total	**151**	**148**	**217**	

Summary of Sanction Vs Requirement:

Sanction	Actual	Requirement	Surplus	Shortfall
151	**148**	**217**	**2**	***68**

3.9 INTRODUCTION OF KRCL SYSTEM OF TRACK MAINTENANCE:

As Railway Board has reiterated for implementation of KRCL system of Track Maintenance vide various letters mentioned as reference in para 2.35 and this section is already, under the process of implementation of KRCL system of Track Maintenance, work study team approach the same to arrive at the man power requirement as per KRCL system is detailed below:

3.9.1 CALCULATION AS PER THE KRCL FORMULA:

Deployment of workforce as per the KRCL system of Track Maintenance is as below:

- The middle tier consists of one Maintenance Gang (MMG) with a Rail Mounted Vehicle headed by a JE/MMG which moves over a jurisdiction of 70-80 km. The MMG comprises of 6 Multi Skilled Men (MSM) and 4 Track Men.

- The Bottom Tier consists of sectional gang which carries out maintenance works for a track length of 35-40 km with gang strength of 12 Trackmen with pick up van mounted with all types of tools.
- One Keyman (Track Safety Man) for each beat comprises of 6-7 kms.
- One Gangmate for each section.
- Gate Keepers according to the total number and classification of LC Gates.
- One Stores Watchman as per the number of depots available.

3.9.2 BENEFITS OF KRCL SYSTEM OF TRACK MAINTENANCE:

- No. of gangs reduced to Sectional Gangs, thereby maintenance activities are carried out through Centralized Planning.
- Reduced Manpower leads to Cost Reduction.
- Improved Transportation P.way materials to the site.
- Mobile Maintenance Gang is recommended for all lines having Traffic Density less than 10 GMT.

3.9.3 MANPOWER REQUIREMENT FOR SSE/PWAY/ATU UNIT BASED UPON KRCL METHOD:

Sl. No.	Category	Middle Tier	Bottom Tier		Total
			Sub-Section I (ATU)	Sub-Section II (SXT)	
1	SSE (In-charge)	1	-	-	1
2	SSE/JE (Spl.)	1	-	-	1
3	Motor Tolley Man	1	-	-	1
4	Technical OA	2	-	-	2
5	Store Watchman (ATU, SXT)	4	-	-	4
Mobile Maintenance Gang (Middle Tier)					
6	JE (MMG)	1	-	-	1
7	Multi Skilled Men (MSM)	6	-	-	6
8	Trackmen (MSM)	4	-	-	4

Bottom Tier					
9	JE	-	1	1	2
10	Track Men	-	12	12	24
11	Track Safety Men (TSM)	-	6	7	13
TOTAL		20	19	20	**59**
Requirement of Gate Keepers: No. of Engineering Gates=23 Double Shift =16790 Man days as per MCNTM Formulae = 57 Men + 7 Reserve = 64					**64**
Requirement of Monsoon Patrolling: = 9 Beats / 2 Shifts / 45 days = 810 Man days as per MCNTM Formulae = 3 Men + 1 Reserve = 4					**4**
Total					**127**

Total Requirement of Track Maintainers (Supervisors +Track Men + Gate Keepers + Patrolling) = 59+64+4 = 127.

3.9.4 **COMPOSITE MANPOWER REQUIREMENT OF SSE/P.WAY/ATU UNIT AS PER KRCL SYSTEM OF TRACK MAINTENANCE:**

Sl. No.	Category	Sanction (a)	Actual (b)	Req. (c)	Surplus (a-c)
1	SSE	3	3	3	0
2	JE	1	0	2	*1
3	OS/PB	0	1	0	0
4	Jr.Clerk	1	1	0	1
5	Carpenter/Sr.Tech	1	0	1	0

6	Blacksmith- HS I	1	1	1	0
7	Blacksmith Helper	1	0	1	0
9	Painter-I	1	0	1	0
10	Painter- III	0	1	0	0
12	Welder-Helper	1	0	1	0
13	STM Helper/Gr.III	0	1	1	*1
14	Track Maintainer Gr.I	10	8	10	0
15	Track Maintainer Gr.II	18	10	18	0
16	Track Maintainer Gr.III	34	21	26	8
17	Track Maintainer Gr.IV	79	94	62	17
18	Act. App	0	7	0	0
		151	**148**	**127**	**Surplus: 26**
***Division may initiate to create 2 posts as above**					

SANCTION VS REQUIREMENT:

Sanction	Actual	Requirement	Surplus	Shortfall
151	**148**	**127**	**26**	***2**

3.10 **RECOMMENDATIONS:**

The following 26 posts are found excess to the requirement as per KRCL system of Track Maintenance. Division may initiate to implement KRCL System of Track Maintenance for this Unit as per CTE/MAS letters and following posts may be surrendered and credited to the vacancy bank **after implementation**.

Sl.No	Category	GP (Rs)	No of Posts
1	Jr.Clerk	2400	1
3	Track Maintainer Gr.III	1900	8
4	Track Maintainer Gr.IV	1800	17
Total		**26**	

Total No. of Posts: 26 Posts.

CHAPTER IV

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

4.1 The Division has furnished the views on draft work study report vide letter No. ATU/S.113 dated 13.06.2020.

The copy of the letter is placed as Annexure IV.

CO-ORDINATING OFFICER'S VIEWS:

The work study report under reference is gone through and the following views/comments are made.

- The work study conducted and the report submitted reflects that the aim of the study is only to reduce the staff strength. A work study is immediately necessary to assess the daily output that is required for each Track man for various track activities like greasing ER clips, boxing of ballast, casual renewal of sleepers, deweeding of cess etc. These basic datas are essentials for arriving the staff strength. The work study report has since been prepared without this basis, and with the records available in the office.
- In much suffering with the vacancies, the section is being managed with available manpower. Nowhere, the systematic maintenance activities could be fulfilled as stipulated in the IRPWM (INDIAN RAILWAY PERMANENT WAY MANUAL). The core reason being huge vacancies in each gang.
- It is again brought to the notice that management differs from maintenance, which requires lot of input to track. The manual provisions shall be complied. The systematic attention to entire length of PSC sleeper track could not be done. The safety cannot be compromised at the cost of economy. The mechanized maintenance with machines does only two activities of through packing, namely packing and aligning. All other 5 activities of through packing are still left and these have to be completed by manual means. Examination of rails, sleepers and fastenings, squaring of heavy PSC sleepers, gauging , pre tamping and post tamping attentions, boxing of the ballast and tidying.
- The work study does not take into account the large number of absentees, sick and large percentage of leave etc., which are hampering regular gang work. Not only are this, the policy of appointment of women employees, who are having capacities for only lesser output not taken into consideration.

- Further the following remarks are made on the submitted report.

i. As referred in para 3.3.5 Total track man required is 182 staffs.
ii. Vide para 3.4 total requirement of Artizan staff is 8 staffs.
iii. Vide para 3.7 total staff requirement in Attur section is 217 staffs.
iv. As per summary staff short fall is 60 staffs.

PLANNING BRANCH REMARKS:

Agreed to.

Manpower planning as per MCNTM formula: This workstudy team has already calculated the staff strength as per MCNTM formula vide 3.3.5 (Total Track Man), 3.4 (Artizan Staff), 3.5 (Supervisors), 3.6 (Ministerial staff). Vide 3.7, total staff requirement as per MCNTM formula has been arrived at 217, with shortfall of 68 posts.

However, this section has been earmarked for implementation of KRCL system of Track Maintenance through various letters by the Railway Board and Hq/S.Rly. Hence it is recommended to implement to the KRCL system vide para 3.9.3.

CO-ORDINATING OFFICER'S VIEWS:

For KRCL implementation.

The man power calculation was in 3.9.3 as three tier system of working it is accepted, provide contractual staffs are engaged.

The requirement of store watchmen under KRCL system is 6 at two stations. Since KRCL system consist of centralized stores for each subsection and for RMV.

Track safety man has the functions of keyman 15 manpower is required including leave reserve and to look over function of Mate.

The requirement of gate keepers is shown as 64, for 23 Manned Engineering LCs.

The actual requirement of GKs for 23 LCs (based on 10 hrs roaster- 60 hrs working per week)

Total requirement of GK is 23 LCs x 3 = 69 Men + 9 Reserve = 78 Men.

Minimum Total Requirement of Track Maintainers (Supervisors + Track Men+ Gate Keepers + Patrolling) = 63+78+4 = 145.

Vide para 3.10, it is mentioned that the surrendering of Jr.Clerk are not agreed to for the reason of accounting of materials, procurement of material, disposal of materials and for implementation of KRCL system Office technical assistance is required.

Based on the above discussions made, it is submitted that the recommendations made for surrendering of the existing vacancies to the vacancy bank are not agreed to.

Further is recommended to increase the number of posts to 145 as sanction as to implement the KRCL system and to manning 23 Nos of engineering LCs from the view of safety and punctuality due to increased traffic.

As an immediate measure all steps shall be taken to fill up vacancies.

Observations recorded and submitted for needful please.

PLANNING BRANCH REMARKS:

Not Agreed to.

KRCL system of Track Maintenance: vide para 3.9.3 sufficient number of staff are allowed as per KRCL system. 4-Store Watchmen for two subsections (ATU & SXT) are allowed which is sufficient for this section, vide para 3.9.3 item no.5. 13-Track Safety Men (TSM) are allowed as per KRCL system vide para 3.9.3 item no.11. Requirement of GKs and Monsoon Patrolling is allowed as 64 and 4, which is sufficient and all the views have been already accounted for.

Total requirement of staff as per KRCL system which has been arrived at 127 is sufficient to maintain this section effectively.

Hence it is recommended that the Division may initiate to surrender the 26 posts identified as surplus, after **implementation of KRCL System of Track Maintenance** for this unit.

CHAPTER V

5.0 FINANCIAL SAVINGS:

If the recommendations made in the study report are implemented after implementation of KRCL System of Track Maintenance, then the annual recurring financial savings will be as under:

S. No	Category	Level	Grade pay (Rs.)	No. of posts	Mean Pay (Rs.)	Annual Financial savings (Rs.)
1	Jr.Clerk	4	2400	1	62361	7,48,332
2	Track Maintainer Gr.III	3	2000	8	53118	50,99,328
3	Track Maintainer Gr.IV	1	1800	17	43817	89,38,668
			Total	**26**		**1,47,86,328**

ANNEXURE – I

SAVE STATEMENT OF SSE/P.WAY/ATU

दक्षिण रेलवे/ SOUTHERN RAILWAY

No. SA/P.275/I/Work Study/Engg.

मंडल कार्यालय/Divisional Office,
कार्मिक शाखा/Personnel Branch,
सेलम/Salem-636 005.
दि /Date: 28.11.2019

Dy.CPLO/MAS

विषय/Sub: SAVE statement of Engineering staff at SSE/P.way/ATU of SA Division

संदर्भ/Ref: SDGM/MAS letter No. G.275/WSSR-701920/2019-20 dtd. 28.11.2019

*****

S A V E statement of staff at SSE/P.way/ATU of SA Division is furnished below:-

Sl. No.	Category	Level	G.Pay	Sanction	Actual	Vacancy	Excess
1	SSE/P.way	L-7	4600	3	3	0	0
2	JE/P.way	L-6	4200	1	0	1	0
3	OS	L-6	4200	0	1	0	1
4	Jr.Clerk	L-4	2400	1	1	0	0
5	Carpenter/Sr.Tech	L-6	4200	1	0	1	0
6	Blacksmith –I	L-5	2800	1	1	0	0
7	Blacksmith Helper	L-1	1800	1	0	1	0
8	Painter-I	L-5	2800	1	0	1	0
9	Painter-III	L-2	1900	0	1	0	1
10	Welder Helper	L-1	1800	1	0	1	0
11	STM Helper/Gr-III	L-2	1900	0	4	0	4
12	Track Maintainer-I	L-5	2800	10	8	2	0
13	Track Maintainer-II	L-4	2400	18	10	8	0
14	Track Maintainer-III	L-2	1900	34	24	10	0
15	Track Maintainer-IV	L-1	1800	79	94	0	15
Total				151	147	25	21

28/11/19

(एन .वेलुमणि / N.Velumani)
सहायक कार्मिक अधिकारी/इं
Assistant Personnel Officer/E
कृते मंडल कार्मिक अधिकारी/सेलम
For Divisional Personnel Officer/SA

ANNEXURE – II

MANDAYS T,R

DIV : SALEM

Senior Section Engineer Unit : ATU

AS ON: 01-Apr-19

Segment No.	Gauge	Segment Name	GMT	Maintenance Type	Track km of Segment	Length of LWR in the Segment	Composite Factor 1+A+B+C	Mandays Required for T Activities	Mandays Required for R Activities	Mandays for T+R
A	B	C	D	E	F	G	H	I	J	K
1	BG	SL	2.1	MECHANISED	73.62	69.70	1.0129	6327.44	11705.58	18033.02
2	0	0	0.0	0	0.00	0.00	1.0000	0.00	0.00	0.00
3	0	0	0.0	0	0.00	0.00	1.0000	0.00	0.00	0.00
4		0	0.0	0	0.00	0.00	1.0000	0.00	0.00	0.00
5		0	0.0	0	0.00		1.0000	0.00	0.00	0.00
6	0	0	0.0	0	0.00	0.00	1.0000	0.00	0.00	0.00
7	0	0	0.0	0	0.00	0.00	1.0000	0.00	0.00	0.00
8	0	0	0.0	0	0.00	0.00	1.0000	0.00	0.00	0.00
9	0	0	0.0	0	0.00	0.00	1.0000	0.00	0.00	0.00
10	0	0	0.0	0	0.00	0.00	1.0000	0.00	0.00	0.00
11	0	0	0.0	0	0.00	0.00	1.0000	0.00	0.00	0.00
12	0	0	0.0	0	0.00	0.00	1.0000	0.00	0.00	0.00
13	0	0	0.0	0	0.00	0.00	1.0000	0.00	0.00	0.00
14	0	0	0.0	0	0.00	0.00	1.0000	0.00	0.00	0.00
15	0	0	0.0	0	0.00	0.00	1.0000	0.00	0.00	0.00
16		0	0.0	0	0.00		1.0000	0.00	0.00	0.00
17		0	0.0	0	0.00		1.0000	0.00	0.00	0.00
18		0	0.0	0	0.00		1.0000	0.00	0.00	0.00
19		0	0.0	0	0.00		1.0000	0.00	0.00	0.00
20		0	0.0	0	0.00		1.0000	0.00	0.00	0.00
Total					73.62	69.70		6327.44	15056.22	21383.66

Summary Mandays T,R	Activity T	Activity R	Total Mandays
BG	8388.80 Mandays*	15056.22 Mandays	23445.02
MG	0.00 Mandays	0.00 Mandays	0.00
NG	0.00 Mandays	0.00 Mandays	0.00
Total	8388.80 Mandays	15056.22 Mandays	23445.02

87750/2020/O/oDYCPLO/PLG/HQ/SR

MANDAYS M

DIV : SALEM

Senior Section Engineer Unit Name : ATU

AS ON: 01-Apr-19

Gauge	Monsoon Patrolling		Hot/Cold Weather Patrolling of LWR					Vulnerable Locations		Gate Keeping			Rest Giver for Keymen		Waterman		Store Watchman		Total Mandays Required For M Activities
	No. of Beats	Mandays Required	Total Length of LWR	Length of LWR Requiring Hot Weather Patrolling	Length of LWR Requiring Cold Weather Patrolling	Mandays Required for Hot Weather Patrolling	Mandays Required for Cold Weather Patrolling	No of Locations	Mandays	No of Engg Manned Gate	Sanctioned Cadre of Gatemen	Mandays Required	No of Keymen	Mandays Required	No of Gangs	Mandays Required	No of Site Stores	Mandays Required	
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
BG	9	810.00	69.70	0.00	69.70	0.00	836.40	5	450.00	23	0	16790.00	11	781.00	11	3234.00	2	2190.00	25091.40
MG	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0		0.00	0	0.00	0	0.00		0.00	0.00
NG	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0		0.00	0	0.00	0	0.00		0.00	0.00
TOTAL	9	810.00	69.70	0.00	69.70	0.00	836.40	5	450.00	23	0	16790.00	11	781.00	11	3234.00	2	2190.00	25091.40

87750/2020/O/oDYCPLO/PLG/HQ/SR

MANDAYS S

AS ON: 01-Apr-19

SALEM

Senior Section Engineer Unit Name: ATU

Gauge	Tunnel Maintenance		Bridge Substructure Maintenance			Long Girder Bridge Maintenance			Extra for very Sharp Curves		Extremely Bad Formation		Lookout Man Mandays Required	Fog Signal Man				Filth Removal		Security Patrolling				Mandays Required For 'S' Activities
	Total Length in km	Mandays Required	No. of Bridges	Lineal Water Way in meters	Mandays Required	No. of Long Girder Bridges	Lineal Water Way of Long Girder Bridges	Mandays Required	Track Km on > 3deg(BG) >6deg(MG)	Mandays Required	Length of Bad Formation	Mandays Required		No of Mandays Required Yr(-3)	No of Mandays Required Yr(-2)	No of Mandays Required Yr(-1)	Mandays Required	No of Gangs working in Affected Area	Mandays Required	No of Mandays Required Yr(-3)	No of Mandays Required Yr(-2)	No of Mandays Required Yr(-1)	Mandays Required	
B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
BG	0.00	0.00	0	587.89	190.12	0	0.00	0.00	0.00	0.00	5000.00	3000.00	244.93	240	240	240	240.00	0	0.00	420	420	420	420.00	4095.05
MG	0.00	0.00	0	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0	0.00	0	0.00				0.00	0.00
NG	0.00	0.00	0	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0	0.00					
	0.00	0.00	0	587.89	190.12	0	0.00	0.00	0.00	0.00	5000.00	3000.00	244.93	240	240	240	240.00	0	0.00	420	420	420	420.00	4095.05

ANNEXURE III

CTE's Letter dated 05-07-2018

(2)

782
10.07.18

SOUTHERN RAILWAY

10 JUL 2018

Headquarters Office,
Works Branch,
Chennai- 600 003.
Date: /07/2018.

W.506/14/KRCL

Sr.DEN/Co-ord./SA & MDU

Sub: Introduction of KRCL syste m of track maintenance in Southern Railway – reg.

Ref: 1) Railway Board's Lr.No.1998/Track-III/TK/2-Vol.VI, dated 03-01-18.
2) CTE's Lr.No.W.506/14/Track Maintenance, dated 08-01-18.
3) CTE's Conference dated 02-07-18.
4) ED/CE(P) message dated.04-07-18.

****

During CTE's conference held on 02-07-2018, ME expressed his displeasure for non implementation of KRCL system of track maintenance in ATU & KKDI sub divisions.

Further, copy of "Report of committee" appointed by Railway Board for adoption of KRCL system of maintenance is sent herewith for our guidance and early implementation of the said system of maintenance.

Encl:- As above.

05-07-2018
(C.Selvam)
Dy.CE/TMS
for Principal Chief Engineer

Copy to: Sr.DEN/Co-ord./MAS,PGT,TVC,TPJ for information

Copy to: Principal/SRCETC/TBM for information and necessary action.

ANNEXURE IV

CO-ORDINATING OFFICER's VIEWS:

दक्षिण रेलवे / SOUTHERN RAILWAY

सहायक मंडल इंजीनियर का कार्यालय
Office of the Assistant Divisional Engineer,
आत्तूर उप-मंडल/Attur Sub-division,
आत्तूर/Attur – 636 102.
e-mail ID:adenatu229@gmail.com

सं/No.ATU/S.113 दि/Dt: 09/06/2020

Dy.CPO/LO/HQ/MAS

05/Plg

(Through DRM/W/SA)

विषय/Sub: *Works study conducted to review the staff strength at SSE/PW/ATU– SA division.*
संदर्भ/Ref: *Work study report - WORK STUDY REPORT No.G.275/WSSR-701920/2019-20*

****

The work study report under reference is gone through and the following views/ comments are made.

- The workstudy conducted and the report submitted reflects that the aim of the study is only to reduce the staff strength. A work study is immediately necessary to assess the daily output that is required for each Track man for various track activities like greasing ER clips, boxing of ballast, casual renewal of sleepers, deweeding of cess etc. These basic datas are essentials for arriving the staff strength. The workstudy report has since been prepared without this basis, and with the records available in the office.

- In much suffering with the vacancies, the section is being **managed** with available manpower. Nowhere, the **systematic maintenance** activities could be fulfilled as stipulated in the IRPWM (INDIAN RAILWAY PERMANENT WAY MANUAL). The core reason being huge vacancies in each gang.

- It is again brought to the notice that **management** differs from **maintenance**, which requires lot of input to track. The manual provisions shall be complied. The systematic attention to entire length of PSC sleeper track could not be done. The safety cannot be compromised at the cost of economy. The mechanized maintenance with machines does only two activities of through packing, namely packing and aligning. All other 5 activities of through packing are still left and these have to be completed by manual means. Examination of rails, sleepers and fastenings, squaring

(2)

of heavy PSC sleepers, gauging, pre tamping and post tamping attentions, boxing of the ballast and tidying.

- The work study does not take into account the large number of absentees, sick and large percentage of leave etc., which are hampering regular gang work. Not only are this, the policy of appointment of women employees, who are having capacities for only lesser output not taken into consideration.

- In view of the above, I differ, with the recommendations submitted in the work study report for surrendering 17 post of track maintainer IV, 8 post of Track maintainer III and 1 post of Jr.Clerk, Totaling 26 posts to the vacancy bank.

- Further the following remarks are made on the submitted report.

  i. As referred in para 3.3.5 Total track man required is 182 staffs;
  ii. Vide para 3.4 total requirement of Artizan staff is 8 staffs;
  iii. Vide para 3.7 total staff requirement in Attur section is 217 staffs;
  iv. As per summary staff **short fall is 60 staffs**.

For KRCL implementation,

The man power calculation was shown in 3.9.3 as three tier system of working it is accepted, provide contractual staffs are engaged;

The requirement of Store watchmen under KRCL system is 6 at two stations. Since in KRCL system consist of centralized stores for each subsection and for RMV.

Track safety man has the functions of keyman 15 manpower is required including leave reserve and to look over function of Mate.

The requirement of gate keepers is shown as 64, for 23 Manned Engineering LCs.

The actual requirement of GKs for 23 LCs (based on 10 hrs roaster- 60 hrs working per week)

Total requirement of GK is 23 LCs x 3 = 69 Men + 9 Reserve = 78 Men

Minimum Total Requirement of Track Maintainers (Supervisors +Track Men + Gate Keepers + Patrolling) = 63+78+4 = 145.

Vide para 3.10, it is mentioned that the surrendering of Jr.Clerk post are not agreed to for the reason of accounting of materials, procurement of material, disposal of materials and for implementation of KRCL system Office technical assistance is required

- Based on the above discussions made, it is submitted that the recommendations made for surrendering of the existing vacancies to the vacancy bank are not agreed to.
- Further it is recommended to increase the number of posts to 145 as sanction as to implement the KRCL system and to manning 23 Nos of engineering LCs from the view of safety and punctuality due to increased traffic.
- As an immediate measure all steps shall be taken to fill up vacancies

Observations recorded and submitted for needful please.

13/10/2020

ADEN/ATU
& Co-Ordinating Officer.

सहायक मंडल इंजीनियर
ASSISTANT DIVISIONAL ENGINEER
दक्षिण रेलवे
SOUTHERN RAILWAY
आतूर / ATTUR

Copy to: Sr.DEN/Co-ord/SA, DEN/C/SA, DPO/SA for kind information.
SSE/PW/ATU for information.