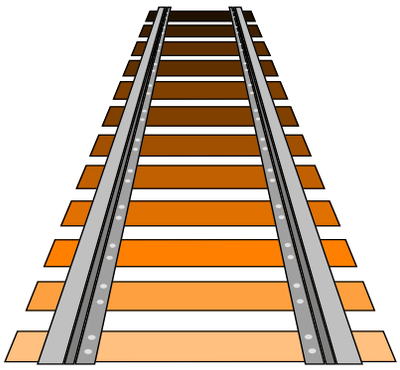

WORK STUDY TO REVIEW THE STAFF STRENGTH AT SSE/P.WAY/SVV MADURAI / DIVISION

NO : G.275/WSSR – 741920/2019 - 20

SOUTHERN RAILWAY

PLANNING BRANCH

G.275/WSSR- 741920/2019 - 20

WORK STUDY TO REVIEW THE STAFF STRENGTH AT SSE/P.WAY/SVV - MADURAI DIVISION

STUDIED BY

WORK STUDY TEAM
OF
PLANNING BRANCH

DEC 2019

(i)

I N D E X

(i)

ACKNOWLEDGEMENT

The work study team sincerely acknowledges the valuable guidance and co-operation extended by ADEN/TEN & SSE/P.WAY/SVV in completing the study in time.

(ii)

AUTHORITY

Annual Programme of Work Studies approved by SDGM for the year 2019-20.

(iii)

TERMS OF REFERENCE

Work study to review the staff strength at SSE/P.WAY/SVV Section of MDU Division.

(iv)

METHODOLOGY

The work study team has applied the following techniques in conducting the work study.

(1) Collection and compilation of Data.

(2) Observation of present system of working.

(3) Interaction with ADEN/TEN & SSE/P.WAY/SVV

(4) Analyzed the data collected and assessed the manpower requirement based on the TRMS formula of CMCNTM and ground realities.

(iv)

SUMMARY OF RECOMMENDATIONS

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Sl no	Category	Grade pay (Rs)	No of posts
1	JE (vacant post)	4200	2
2	TECH I (Carpenter) (vacant post)	2800	1
3	Track maintainer II (vacant post)	2400	2
Total			**5**

Total : 5 Posts

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CHAPTER - I

1.0 INTRODUCTION

1.1. MADURAI DIVISION

MDU Division was formed on 16.05.1956 and this is the biggest and longest division in Southern Railway with 1356 route km. This division was part of the old SIR (South Indian Railway Company). TVC division was formed in 1979 mainly from MDU division. In the year 2006-07 Pollachi and Ginathugadavu section was handed over to PGT division, again the same was handedover to SA division. It extends to over 11 districts of Tamil Nadu and two districts of Kerala State.

1.2. The SSE/P.Way/SVV is a field unit of Civil Engineering department of Southern Railway to look after the maintenance of track and other auxiliary works.

1.3. Permanent Way is the major activity of the Engineering branch which is entrusted with the periodical maintenance of tracks, bridges, LC gates and other assets. A well maintained track is very essential for speedy, safety and efficient operation of trains. Continuous monitoring and Inspection is warranted daily in ensuring a reliable permanent way.

1.4. The modern technologies led the track maintenance techniques from the era of pick axe & shovel to the era of modern mechanized Track maintenance. The interconnection with S&T and TRD branches is a new development in the team work. The equipments for testing the track have become sophisticated not only in detecting the failures but also in preventive check. It will be worth mentioning the use of Ultrasonic Flaw Detector (USFD) equipment which detects even the minute air crack and blowholes in the rail which might develop into a rail crack leading to derailments.

1.5. The magnitude of outsource in maintenance activities paved way for a meticulous calculation to arrive at the manpower requirement in commensurate with the major developments taken place in the field of track maintenance.

1.6. The manpower requirements of SSE/PWAY/SVV is arrived based on the TRMS formula of CMCNTM, approved by Railway Board vide letter No. 95/CE-1/CWS/2/Vol.II/Pt.II dt.06.03.2006 which recommends to incorporate the effects of modernization once in 5 years such as introduction of more number of shoulder ballast cleaners, improving rail-weld technology, better design of SEJs, maintenance free level crossing track structure.

1.7. Substantial investments on Track machines over the years to improve the quality of Track structure and curtailment in the need of its annual maintenance led to the reduction in the number of staff deployed on the track maintenance activities.

CHAPTER – II

2.0 PRESENT SCENARIO

2.1 Organization

The Engineering department of MDU division is under the control of Sr.DEN/Co-ord/MDU. The Permanent Way section of SVV which is managed by SSE under the direct & general control of ADEN/TEN & DEN/South/MDU respectively.

2.2 PWAY/SVV section is BG single line in "B" route with Absolute Block signaling system, Multiple Aspect Colour Light signals in Standard Interlock relay system(IR) & Route relay Interlock system(RRI). Its jurisdiction is from TCN – TEN (Excl) between 0.0 – 61.304.

2.3 Between TCN – TEN section, about 07 numbers of Mail/Exp/Passenger trains are operated with a maximum permissible speed of 70 Kmph & for goods trains 60 Kmph respectively. The traffic density of TCN – TEN section is 4.07.

2.4 The percentage of utilization of line capacity between TCN – TEN is 46% on an average. In this section there are 27 level crossings gates out of which 07 LCs are operated by Traffic department and the rest are Engineering gates

2.5 The brief outline of regular activities at P.WAY /SVV is as under

- Picking of slacks
- Through packing
- Lubrication of Rail joints
- Clearing of water drains, side drains
- Waterways of bridges
- Casual renewal of Rails
- Casual renewal of Sleepers
- Opening & examining and overhauling of LC gates
- Attention to Points & Crossings

Activities other than regular duties

- Loading and unloading of materials
- Monsoon patrol
- Repair of bridges
- Stock verification
- Repair of ash pits, water columns, CC aprons etc
- Resurfacing of Points & crossings
- Complete realignment of curves
- Deep screening
- Painting of bridges
- Watching of materials
- Complete renewal of Points & crossing

2.6 The actual staff strength of SSE/PWAY/SVV as on OCT 2019 is 113 including SSE, JEs, Ministerial staff & Track men's as against the sanctioned strength of 124.

2.7 The entire section is maintained by 10 gangs as detailed below

Gang no	From KMS	To KMS	Between station	Head quarters
PCO 1	0/300	6/800	TEN – PCO	PCO
PCO 2	6/800	13/200	PCO – SDNR	LC no.6
SDNR 3	13/200	19/600	SDNR – TTQ	SDNR
TTQ 4	19/600	26/000	TTQ – SVV	LC no. 15
SVV 5	26/000	32/600	TEN – TCN	SVV
AWT 6	32/600	39/000	TEN – TCN	AWT
KCHV 7	39/000	45/400	NZT – KZB	KCHV
KZB 8	45/400	51/800	KZB – ANY	KZB
KZY 9	51/800	57/500	ANY – KZY	KZY
TCN 10	57/500	61/600	KZY – TCN	TCN

2.8 The stations coming under this Jurisdiction(TEN – TCN) is detailed below

- Palayamkottai (PCO)
- Seydunganalur(SDNR)
- Thathankulam(TTQ)
- Srivaikuntam(SVV)
- Alwar thirunagari(AWT)
- Nazareth(NZT)
- Kanchchanavilai(KCHV)
- Kurumbur(KZB)
- Arumuganeri(ANY)
- Kayalpattinam(KZY)
- Tiruchendur(TCN)

2.9 The present Sanction and actual staff of SSE/P.WAY/SVV including Supervisors, ministerial staff & track men categories are as under:-

Sl. No.	Designation	Sanction	Actual	Vacancy	Excess
1.	Sr.Section Engineer	1	2	-	1
2	Junior Engineer	3	1	2	-
3	CHOS/Works	1	1	-	-

4	OS/PB	1	1	-	-
5	TECH I(Carpenter)	1	0	1	-
6	Tech/I/Smithy	1	1	-	-
7	Lascar	-	1	-	1
8	Track man I	13	4	9	-
9	Track man II	25	16	9	-
10	Track man III	25	26	-	1
11	Track man IV	53	68	-	15
12	STM Gr.III	-	1	-	1
Total		124	122	21	19

2.10 **Level crossing gates:**

There are 27 Manned/Unmanned level crossing gates under the jurisdiction of SSE/PWAY/SVV, out of which 20 are Engineering and 10 are Operating LC gates. Roster followed by Engineering LC's manned gates is here under :
20 LC gates – 8 hrs & 12 hrs roster.

2.11 List of Rail/Weld failures during the last Two years

Sl no	Date of Failure	Type of Failure	KMS	Between Stations
01	29/7/19	Weld failure	52/5 – 6	ANY – TEN
02	29/7/19	Weld failure	53/5 – 6	ANY – TEN
03	23/10/19	Weld failure	36/1 – 2	SVV – NZT
04	23/10/19	Weld failure	36/10	SVV - NZT

2.12 Other particulars of the SSE/PWAY/SVV section

Sl no	Details	Particulars
1	No of Gang Units	10
2	Jurisdiction	TCN – TEN(Excl) kms 0 – 61.304
3	Line	Single line section "E" Route
4	Stations between jurisdiction	TEN, PCO, SDNR, TTQ, SVV, AWT, NZT, KCHV, KZB, ANY, KZY & TCN
5	Welding techniques	Alumino Thermit
6	Level crossings	27(Eng – 20 & Tfc – 07)
7	Duty hours of Track man & Gate keepers	8 Hrs in all 20 LC gates

8	Whether Thermal censoring thermo meter provided	Yes
9	SNP	Nil
10	Maximum speed of the trains	70 Kmph for Coaching & 60 Kmph for Goods trains
11	Activities outsourced/proposed	Nil
12	Total no's of trains	6 Pair trains per day
13	Speed restrictions	Nil
14	Total Route Kms	61.304

2.13 There are 09 major bridges in addition to 194 minor bridges, ROB – 2 and LUS (Limited user subway) – 3 No's.

2.14 There are 30 curves in this section out of which more than 3 degree cures is only 3 No's.

CHAPTER III

3.0 CRITICAL ANALYSIS

3.1 Previously, Permanent Way Gang strength was calculated based on special committee report of 1979. As many changes in track maintenance practices, methodologies, advanced techniques and use of machineries inducted in P.Way maintenance during late 1990s led to study the requirement of work load Vs man power requirement. A committee had been formed to suggest a Rational formula for the same. The committee on Manpower and Cost Norms for Track Maintenance (MCNTM) had submitted its report in 2001 and the same was approved by Railway Board in the year 2006.

The Rational Formulae have been evolved by the MCNTM Committee by collecting the field data over 14 Non Suburban sections and 3 High Density Suburban sections through direct interaction with field Engineers on seven zonal railways and after carrying out critical analysis of the data by adoption of a zero based approach.

3.2 EXTRACT OF MCNTM REPORT

The committee recommends that a review should be made once in 5 years so as to evolve reduction factors to be applied for yardstick of manpower requirement of SWR/LWR tracks.

The committee has evolved the Rational Formulae based on average productivity of individual gangmen. Gang strength should be adjusted by an annual review carried out as on 1st April by continuously adopting the input data and by utilizing the software `MANPOWER`. Indian Railway Institute of Civil Engineering (IRICEN), Pune is the custodian of this software, making amendments from time to time and incorporating the review of this Formulae once in five years.

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 Kilometre). 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 Kilometre) 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 mechanisation 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 Utilization of Track machines in MDU Division

The following are the types of track machines worked in this section during the last two years.

- BCM – Ballast Cleaning Machines
- CSM – Continuous Action Tamper
- DTS – Dynamic Track Stabilizer
- UNIMAT – Points and crossings tamping machine
- UTV – Utility Track Vehicle
- BRM – Ballast Regulating Machine

3.5 As per the new rational formula, the track maintenances are categorized as under:

i) Primary Maintenance

ii) Auxiliary Maintenance

i) Primary Maintenance Activities

These activities are directly related to P.Way maintenance, further classified as:

a) Activities "T" (affected by traffic density)

These are arrived at achieving safety and acceptable running quality, commensurate with the loads and speeds carried.

b) Activities "R" (Routine – unaffected by traffic density).

These are for maintaining track, formation and other integrated assets which are of routine nature but quite important for train operating and for achieving reliability and long life of assets.

ii) Auxiliary Maintenance Activities

These are related to up keep of P.Way section as a whole, needs man power based on localized problems, special features and geographical nature of P.Way section, further classified as

a) Activities "M" (Miscellaneous)

For these activities, the quantum of work arising in the P.Way section can be assessed on a universally adoptable basis and the yardstick relating man days requirements to out put is rationally stipulated for each sub activity.

b) Activities "S" (Site specific)

For these activities, the quantum of work arising varies from location to location depending on site specific features of the P.Way section and the yardstick is stipulated generally based on the past experience.

3.6 The sub-activities of "T" & "R" are broadly classified on the type of track.

i) Machine Packed Track (Non-suburban)

ii) Manually Packed Track (Non-Suburban)

iii) Machine Packed Track (High Density Suburban)

P.Way/SVV comes under the Machine Packed Track (Non Sub-urban) category.

The sub-activities "T" of that particular type of track is listed as under:

Machine Packed Track (Non- Suburban)

T_1 : Slack attention to

i) Bad spots
ii) Low joints
iii) SEJs
iv) Minor curve attention

T_2 : For Tie tamper working

i) Pre – tamping operations

ii) Along with tamper.

iii) Post Tamping attention.

T_3 : Casual Renewal of

i) Rails

ii) Sleepers

iii) Fasteners (Including attentions)

T4 i) Repair Welding

Activity 'R' Machine Packed track (Non- Suburban)

R1 Lubrication of ERCs.

R2 Shallow Screening (1/5 L^{th}).

R3 Loading, Leading & Unloading.

R4 Overhauling of LCs.

R5 Watching Caution spot and Miscellaneous.

R6 Tree cutting for visibility.

R7 Lubrication of rails in curves

R8 Accident relief and carcass removal in run-over cases.

R9 Bridge sleeper attention and renewal.

R10 Pre-monsoon attention such as cleaning of drains and waterways, cess repairs, de-weeding of track and attention to cuttings and trolley refuges.

R11 Creep Pulling

R12 Rectifying damage to LC posts and gates

Sub-activities of 'M' (Common for all types of track)

M1 Monsoon patrolling.

M2 Hot weather patrolling for LWR track.

M3 Cold Weather Patrolling for LWR track

M4 Watching of vulnerable locations.

M5 Gate Keepers at Engineering LCs.

M6 Rest giving for Key men.

M7 Waterman duty (To serve the gang)

M8 Store Watchman duty (at isolated location of P.Way material stores)

Sub-activities of 'S' (Common for all types of track)

S1 Tunnel maintenance.

S2 Bridge substructure maintenance.

S3 Long girder bridges maintenance.

S4 Extra workload due to very sharp curves, deep cutting and steep gradients.

S5 Maintenance of track on extremely bad formation.

S6 Lookout man duty (for the safety of gangs).

S7 Fog signal man duty (to assist traffic department).

S8 Filth removal from track (within city limits).

S9 Security patrolling.

S10 Watching of water level in Suburban Section (Mostly in Mumbai area) during monsoon and stopping of trains as and when found necessary.

3.7 The norms for each sub-activity of T, R, M, S is arrived based on the site and local conditions. A software has been designed to arrive the man days for T,R,M,S. The man power requirement is determined by dividing the total man days of T, R, M, S by 294 working days derived as follows.

One year = 365 days

Sundays = 52 days

Public holidays = 9 days

Casual leave = 10 days

Total No. of Holidays = 71 days

Available man days per year = 365 – 71 = 294 days

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 166 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)

3.8 Corrections required in TRMS worksheet

The total of `T` activities is shown as 5909.38 whereas in the summary it is shown as 7701.94 man days its includes shallow screening. But shallow screening is coming under regular activities (R) hence the difference of 1792.56 man days is deducted from `T` activity and added in R activity.

Similarly the actual total of the 2nd items under `R` activity is only 10194.29 whereas the summary column has taken as 12259.49 man days leading to a difference of 2065.20 and if 1792.56 man days is added for the correction in shallow screening, the calculation will be 11986.85 man days for `R` activity.

In fact, the four sub activity under 'T' has come down due to technological improvements in Track maintenance, welding etc,.

T1 - slack attention to

a) Bad spots – In this section bad spots are in three locations 17/0 – 20/0, 25/0- 27/0 and 30/0 – 34/0 Kms due to bad soil, the same attended by concerned gang staffs.

b) Low joints – Low joints happens occasionally only in yards of SDNR, SVV, NZT, ANY & TCN station limits.

c) SEJ's - 28 no's SEJs (Conventional type) available in this section the same attended once in 15 days by track men within their gangs jurisdiction.

d) Minor curve attentions – In this section more than 30 curves is available, out of which more than 3 degree curves is 3 and it is a regular activity done in this section by the concerned gang jurisdiction.

T2 - for Tie Tamper working

a) Pre tamping operations

b) Along with tamper

c) Post tamping operations

This activity done once in four years through trackmachines by utilizing contract and department staffs.

T-3 - Casual Renewal of

a) Rails – It is a single line section with LWR track, renewals done only in yards if any rail failures occurs.

b) Sleepers – In this section casual renewal of sleeper is very rare, the same attended by departmental staffs if any damages occurs in sleepers.

c) Fasteners along with re-gauging – This will be renewed occasionally when ever any damage occurs in fasteners.

T-4 - Repair welding

In this section, 2 Rail/Weld failures occured in the last two years and the same was attended by Trained track maintainer.

In T activity - T2 Tamping works done through Track machines once in 4 years through contract staffs and some of the works in T3 & T4 activity occasionally done by the departmental staffs. Hence in T activity only 70% work done regularly, i.e. 70% of 5909.38 is **4136.566 allowed** based on existing work load.

3.9 'R' activities The actual total of `R` activity is only 10194.29 and 1792.56 man days(differences from T activity=7701.94-5909.38) is added as shallow screening, hence the calculation will be 11986.85 man days for `R` activity.

3.10 Discussion on activities under 'R'

R1 -Lubrication of ERCs-

Done by Key man 20 sleepers per day per men.

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

Done by Track machines through contract staffs once in a two years and also this activity is not a regular one.

R3 -Loading, Leading, Unloading

This is not regular activity, whenever materials required the track maintainers deputed to stores depots at MDU/GOC/GSD/PER/Depot/ERS for getting materials.

R4 -Overhauling of LC gates

This will be done by Black smith with track maintainers once in two years to cover all 27 LC gates.

R5 -Watching of caution spots & misc.

In this section 10 locations are caution spots due to bad soil, major bridges, and heavy cuttings, hence the same is attended by the concerned jurisdiction gangs during moon soon period.

R6 -Tree cutting for visibility

This will be done once in a month by departmental staffs

R7 -Lubrication of Rails in Curves

It is regular activity for lubrication and tight fittings once in a 15 days for more than 3 degree curves.

R8 -Accident Relief and carcass renewal in run over cases

In this section accidents is minimum due to less frequency of trains. If anything happens, the car cases will be removed by GRP staffs.

R9 -Bridge, Sleeper attention & Renewal

As per SSE statement, the sleeper renewal is very rare but attention should be required for painting of fixtures (fittings), tighten of bolts & nuts once in a month.

R10 -Pre-monsoon attention such as clearing of drains and waterways, cess repair, de-weeding of track and attention to cuttings & Trolley refuges

This will be done during Pre and Post monsoon period only.

R11 -Creep pulling approaches to bridges, turnout.

As per SSE statement creep pulling not done in this section.

R12 **-**Rectifying damage to LC posts and gates.

This activity done when ever any damages occurs in LC gates due to vehicle hits, the same attended by blacksmith and track maintainers. In this section LC gate damages is very rare only maintenance works is done.

In the above said 12 activities, 7 activities done regularly and the remaining 5 activities done occasionally by the departmental staffs, hence in R activity 60% of 11986.85 i.e. **7192.11 man days is allowed.**

3.11 'M' activity

M1- Monsoon patrolling- 840 man days

M1 - Monsoon patrolling $\sum (D \times b \times s \times m)$ 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.)

For this activity 840 man days is calculated in the TRMS calculation. It is claimed that there are 10 beats in this section and monsoon patrolling is carried out from 01st Oct to 30th November every year. In this section only one track man is nominated for one beat, hence the man days mentioned in TRMS is allowed as it is.

M2 & M3 -Hot/Cold weather patrolling – No man days

As per SSE statement Hot & Cold weather patrolling not done in this section. In TRMS also man days not mentioned for this activity.

M4-Vulnerable Locations - 600 man days

In this section they are 11 vulnerable locations (Bridges no.1, 43, 55, 60, 68, 75, 136, 145, 184, 190, 191) as per SSE statement, for each location 01 track men

deputed to look after night duties only during the moon soon periods. Hence the mentioned man days in TRMS is allowed as it is.

M5-Gate keeping - 9744 man days

In this section there are 27 LC gates available out of which 07 LC's manned by operating and remaining 20 LC's by engineering department. The duty hours of gate keepers are 12 hours shift in 13 LCs and 8 hours in 7 LCs.

Man days mentioned in TRMS for gate keeping is 9744 for manning 20 engineering LC 's. As per TRMS only 33 gate keepers arrived, but practically 47 gate keepers required to man 20 LC's. Hence the mentioned man days in TRMS for gate keeping is allowed as it is.

Sl no	Roster Hrs	No's	Manpower	R/O
1	12	13	02	26
2	08	07	03	21
Total		20		47

RG/LR is calculated for gate keepers in total summary sheet.

M6 - RG for Key men - 710 man days

PWAY/SVV section having 10 gangs it requires 10 key men. RG for 10 key man at the rate of 1:6 ratio. Hence total requirement of man days is 588(2 x 294) and the remaining 122 man days is excess to the requirement.

M7-water man – 2940 man days

SSE/Pway states waterman activity is not carried out in this section. Hence man days 2940 mentioned in TRMS found excess to the requirement.

M8- Store activity - 1095 man days

In this section only one stores depot available located in PWAY office and the same managed by 2 store watch man looking after EI roster (12hrs roster). Hence for manning one locations 588 man days (2 SWM x 294 Man days) required and remaining 507 man days is found excess to the requirement.

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

Sl. No	Activity	Man days required
M1	Monsoon patrolling	840
M4	Watching vulnerable location	600
M5	Gate keeping	9744
M6	RG for Keyman	588
M8	Store watchman	588
	Total	**12360**

3.13 Activity 'S' – Miscellaneous

S1 -Tunnel Maintenance – Nil

No Tunnels in this section.

S2 -Bridge substructure maintenance – 297.49 man days

As per SSE statement, track maintenance work done only on the bridges, but bridge structure is maintained by SSE/Bridges & Works. Hence the mentioned man days 297.49 is excess to the requirement.

S3 - Long girder Bridge maintenance – Nil

The Long girder bridge not available in this section.

S4 - Extra maintenance due to very steep curves, deep cutting steep gradient – 605.64

In this section total number of curves is 30 out of which more than 3 degree curves is 3. Hence the man days 605.64 mentioned in TRMS is allowed as it is.

S5 - Maintenance of track on extremely bad formation – 6780 man days

As per SSE statement three locations affected with bad spots such as 17/0 – 20/0, 25/0 – 27/0 & 30/0 – 34/0 kms due to bad soil. Presently 3 track men is deputed during night shift only for each location. Hence for this activity 882 (294 x3) man days required and the remaining 5898 man days is excess to the requirement.

S6 - Look out man duty (for the safety of gang) – 390.38

In this section 3 deep curves (more that 3 degree) is available, during gang working hours one look out man required for each location, in TRMS 390.38 man days mentioned and the same is allowed as it is for safety gangs.

S7 - Fog signal man duty (to assist traffic Dept) – 60 man days

60 man days is arrived in TRMS is allowed as it is.

S8 **-** Filth removal from track(within city limits) – 1764 man days

Filth removal in yards & stations done by HI through cleaning contract, nowadays all the trains available with bio – toilets system. As per SSE statement this activity not done in this section. Hence the mentioned man days 1764 in TRMS is found excess to the requirement.

S9 -Security patrolling – 120 man days

SSE states security patrolling done during VVIP movement by utilizing the available track men. In TRMS 120 man days is mentioned, the same is allowed as it is.

S10 - Watching of water level in suburban

Not applicable

3.14 The man days for 'S' activities

Sl. No.	Activity	Man days required
S4	Extra maintenance due to very steep curves, deep cutting steep gradient	605.64
S5	Maintenance of track on extremely bad formation	882
S6	Look out man duty(for the safety of gang)	390.38
S7	Fog signal man duty(to assist traffic Dept)	60
S9	Security patrolling	120
Total man days		**2058.02**

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

Sl. No.	Activity	Man days required
1	**'T'**	4136.566
2	**'R'**	7192.11
3	**'M'**	12360.00
4	**'S'**	2058.02
	Total man days	**25746.696**

Hence the man power is arrived as follows

25746.696/294 = 87.57

RG = 16.6/100 X 87.57 = 14.53 = 87.57 + 14.53 = 102.10

LR = 12.5/100 X 102.10 = 12.76 = 102.10 + 12.76 = 114.86 say 115 men.

3.16 Requirement of Trolley men

There are two push trolleys available to carry out the regular track inspection and other track related activities. Trolley movements are carried out by both SSE /HQ and JE's in three batches of trolley/ track men is working with trolleys. The study takes the maximum number of trolley movements as 15 per month (including officers ADEN/DEN/DRM & Head quarters officers). Even if all the supervisors & officers move by trolley the total requirement will be 15 days.

Further, the schedule of trolley movement of SSE is only 50% of the sub section SSE/JEs subject to one mandatory movement in a month. Such being the case, 4 trolley men is required.

If the movements are well planned with the coordination among the supervisors, the trolley movement inspection can be easily fulfilled with a set of 4 trolley men.

As on date the category of Trolley man, Track mates, Key man & Track man is merged in to a single category called as Track maintainer I,II, II,IV such being the case, the calculation of Trolley men separately is not made at now.

The total requirement is 115 +4 = 119 men

3.17 Requirement of Pway staffs/SVV

Sanction Vs Requirement

Sl. No.	Designation	Sanction	Actual	Requirement	surplus
1.	Sr. Section Engineer	1	2	1	-
2	Junior Engineer	3	1	1	2
3	CHOS/Works	1	1	1	-
4	OS/PB	1	1	1	-
5	TECH I(Carpenter)	1	0	-	1
6	Tech/I/Smithy	1	1	1	-
7	Lascar	-	1	-	-
8	Track man I	13	4	13	-
9	Track man II	25	16	23	2
10	Track man III	25	26	25	-
11	Track man IV	53	68	53	-
12	STM Gr.III	-	1	-	-
Total		124	122	119	5

Recommendations

Sl no	Category	Grade pay (Rs)	No of posts
1	JE	4200	2
2	TECH I (Carpenter)	2800	1
3	Track maintainer II	2400	2
Total (vacant posts)			**5**

CHAPTER – IV

4.0 PLANNING BRANCH'S REMARKS ON CO – ORDINATING OFFICERS VIEWS

The draft work study report for this study was handed over to ADEN/TEN, Co-ordinating Officer on 12/12/2019 to offer his remarks. Normally a period of 15 days is allowed to offer Co – ordinating officer remarks. In this case even after 15 days the remarks have not been received. Hence the work study report is released without the remarks of Co – ordinating officer.

CHAPTER – V

5.0 FINANCIAL SAVINGS

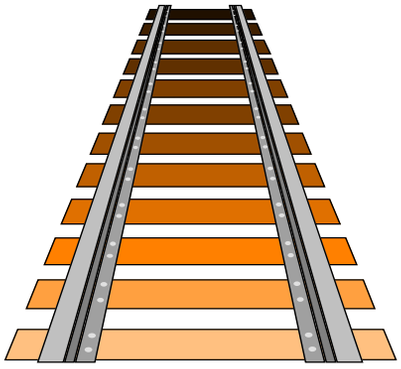
5.1 If the recommendations made in the study report are implemented, the annual recurring financial savings will be as under

Sl no	Category	No. of posts	Grade Pay (Rs.)	Money value (Rs.)	Annual Savings (Rs.)
1	JE	02	4200	82768	1986432
2	Tech I (Carpenter)	01	2800	68040	816480
3	Track maintainer II	02	2400	59696	1432704
Total		**05**			**4235616**

ANNEXURE - I

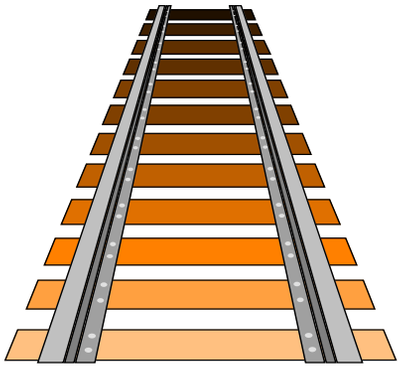
SAVE STATEMENT OF SSE/PWAY/SVV

Sl. No.	Designation	Sanction	Actual	Vacancy	Excess
1.	Sr.Section Engineer	1	2	-	1
2	Junior Engineer	3	1	2	-
3	CHOS/Works	1	1	-	-
4	OS/PB	1	1	-	-
5	TECH I(Carpenter)	1	0	1	-
6	Tech/I/Smithy	1	1	-	-
7	Lascar	-	1	-	1
8	Track man I	13	4	9	-
9	Track man II	25	16	9	-
10	Track man III	25	26	-	1
11	Track man IV	53	68	-	15
12	STM Gr.III	-	1	-	1
Total		124	122	21	19



WORK STUDY TO REVIEW THE STAFF STRENGTH AT SSE/P.WAY/SVV MADURAI / DIVISION

No.G.275/WSSR- 741920/2019 - 20



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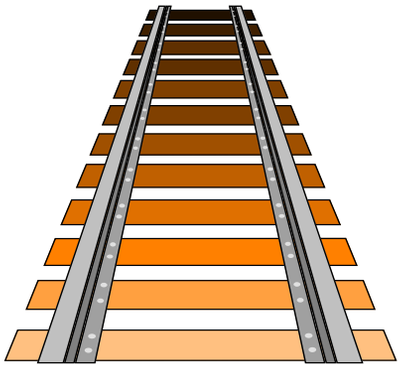

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