SOUTH EASTERN RAILWAY

REVIEW OF STAFF STRENGTH VIS-A-VIS WORKLOAD

AT THE SIGNAL & TELECOM WORKSHOP/ KGP

EFFICIENCY CELL
GARDEN REACH, KOLKATA – 700 043.

STUDY NO. EFF/918

S Y N O P S I S

1.	Name of the work study		Work study on the staff strength vis-à-vis workload at the Signal & Telecom Workshop/Kharagpur.
2.	Terms of reference		The study on the assessment of staff strength vis-à-vis workload of the Signal Workshop/ Kharagpur has been taken up as proposed by GM/SER.
3.	Aim		To make a comparative study of the present sanctioned staff strength and the available workload at the Signal Workshop/KGP.
4.	Projected surrender.		Surrender- 33 posts,
5.	Projected savings		Rs 158 Lakhs per annum
6.	No of recommendations		Four
7.	Critical analysis & observations		Analysis done on the basis of actual study, spot observations and future modernisation plans.
8.	Brief note on recommendations		**Rec–I:** The flow of materials required for the working of SWS is required to be streamlined. **Rec–II:** The unusable & unserviceable Block instruments & the unusable Machines available in the shop may be suitably disposed off or rectified (and put to use) as deem fit. **Rec–III :** Steps are required to minimize the recurring losses, either by revaluating the Price List of the finished materials or otherwise. **Rec–IV :** The 33 vacant posts may be immediately surrendered outright without affecting promotional prospects of the incumbents.
9.	Department concerned		Signal & Telecommunication

C O N T E N T S

C H A P T E R - I

1.0. INTRODUCTION

Railways had managed the majority, or even the totality of internal non-core processes which support core operations and these were carried out by our own personnel resources. The need of the day is to devote basically on the core activities relating to the transportation part.

These non-core activities can be handled by skilled experts who possess expertise in their respective fields. This shall lead to a better focus on the core activities, better risk management, increasing in-house efficiency and finally improvement in services leading to customer delight.

Today the Railways' financial position is under considerable stress. The loss of market share to road transport in the freight business, lack of operational flexibility, especially in pricing high and unrequited costs, a huge pension liability and inadequate internal generation of resources coupled with skewed investment decision, driven by different factors have combined to bring the railways to a difficult (financial) situation. This has resulted in the increase in operating ratio.

We should plan for hiving off of non-transportation tasks. The need of day is to concentrate on the core activities of infrastructure and operation, keeping the options open for corporatization of manufacturing/ maintenance of rolling stock and discovering the scope for outsourcing of the other activities. The entire range of activities falling outside the core transportation operations such as manufacturing of rolling stock and other items, parcels, booking and reservation of tickets, management of cleanliness in major stations and staff colonies etc. may be outsourced if necessary. There are various points in the railways where work is required for transport but can be done by another agency more efficiently at a lesser cost. This should be reviewed for the perspective of either retention or outsourcing/hiving off. Enhancing profitability would be essential to generate sufficient internal surplus for funding the capacity augmentation and modernization plans.

Indian Railways have at present 10 Signal Workshops located at Byculla (CR), Howrah (ER), Gaziabad (NR), Gorakhpur (NER), Podanur (SR), Mettaguda (SCR), Kharagpur (SER), Sabarmati (WR), Ajmer (NWR) & Pandu (NFR) to overhaul and also manufacture the various types of Signalling equipments like Relays, Block instruments, Axle counters, Battery chargers, Gate Booms, various types of signal boards etc.

Signal & Telecom Workshop/ KGP is not a production but a repairing unit. Initially this workshop was set up for catering to the needs of the Signal as well as Telecom units. Presently, this has become only a Signal Workshop for overhauling various types of Block Instruments, battery chargers and manufacturing of Mechanical items like Gate Booms, various types of signal boards, electrical deptt items, etc. The targets for overhauling of the different signaling items by the signaling workshops are fixed basing upon the demands placed by the individual units.

The study has been taken up as proposed by GM/SER with a view to determine the actual requirement of staff vis-à-vis workload at the Signal Workshop/ KGP in the present scenario.

C H A P T E R – II

2.0 STAFF STRENGTH

2.1 Cadre position of the officers, supervisors & ministerial staff of the Signal Workshop/KGP as on October ' 19 is as follows :

Srl.No	Designation	GP & Level	Sanctioned	On Roll	Vacancy
1	**ASTE/SWS/KGP**	**L-9**	**01**	**00**	**01 (look after by PSTC/KGP)**
2	**SSE/ Signal**	**L-7**	**04**	**03**	**01**
3	**JE/ Signal**	**L-6**	**02**	**00**	**02**
4	**SSE/ Tele**	**L-7**	**03**	**00**	**03**
5	**JE/ Tele**	**L-6**	**02**	**01**	**01**
6	**Ch.OS**	**L-7**	**01**	**01**	**00**
	Total		**12**	**5**	**7**

2.2 Cadre position of Artisan & Group 'D' staff is as follows:-

Srl.No	Designation	Grade Pay	Sanctioned	On Roll	Vacancy
1	**Sr. Tech.**	**L-6**	24	10	14
2	**Tech Gr -I**	**L-5**	44	9	35
3	**Tech Gr –II**	**L-4**	6	11	-5
4	**Tech Gr -III**	**L-2**	0	22	-22
			74	**52**	**22**
5	**Helper**	**L-1**	12	8	4
Total Group 'D'			**12**	**8**	**4**
Grand Total			**86**	**60**	**26**

2.3 The summarized Sanctioned cadre, on-roll & Vacancy position of Signal Workshop/KGP as on October'2019 is as follows: -

Srl. No	Category	Cadre position		
		Sanctioned	**On-roll**	**Vacancy**
1	Supervisors	11	4	**7**
2	Ministerial	1	1	**0**
3	Gr – C	74	52	**22**
4	Gr – D	12	8	**4**
	TOTAL	**98**	**65**	**33**

ASTE/SWS/KGP is the in-charge of the unit. Presently, it is looked after by PSTC/KGP. The unit is directly controlled by CSE/GRC at Headquarters level.

C H A P T E R – III

3.0 EXISTING SYSTEM OF WORKING

3.1 The Signal Workshop/KGP was originally established in 1949 as Signal & Telecom Workshop. Presently it is a Signal Workshop. Though it is not officially declared as a production unit but at present it also manufactures different types of racks, boards & booms etc. Repairing, overhaul & maintenance of different types of signaling equipments like Block instruments, Battery chargers etc., are being done in this workshop. The Signal workshop comprises of the following Sections and their working is as follows:

3.2 Mechanical Section

The Mechanical section manufactures fabrication items like MS Racks, relay racks, frames, bolts, stop boards, P, C, A & G marker, Emergency sliding Boom, Modified L.C gate boom, Point JB for LC Gate, Goods Warning Boards, MS pin, Fractured boom, Track drilling machine, Ground connection, Different type of fencing, Tumbler spring of E-type lock, Cable fixing frame, Compact roller, P bracket, D bracket, Foundation bolt, earthing pipe etc. Due to non availability of 5mm EN45 plates, test pieces are not being manufactured. Electric (lamp) posts are also being manufactured by this section. 40 nos have been already been delivered during the FY of the 100 requisitioned by the Electrical department.

The existing man on roll is as follows :- SSE-1, Sr.Tech- 4, Tech Gr (I)- 2, Tech(II)- 8, Tech(III)- 7 & Helper - 2 = 23 + 1 SSE.

3.3 Block Instruments Overhauling Section

This section deals with overhauling of Token Less Block instrument, Double Line Block instrument and Block Bell Unit. The annual target for DLBI & TLBI is 100 & 72 each. Overhauling of Block Bell Unit is as per demand. The monthly average overhauling for DLBI is 9 to 10 & for TLBI is 6 to 7. The scheduled target for overhauling of DLBI is 15 days and TLBI is 60 days respectively. TLBI for overhauling on hand was 17 nos.

In course of the study it was also seen that a total of 56 DLBI, 13 + 52 old obsolete model i.e. 65 TLBI and 56 (DS-8) + 41 non-repairable i.e. 91 SLBI are waiting for DS-8 since August'2010. The approximate scrap value of these block instruments is more than Rs. 47 lakhs.

The existing man on roll is as follows :- SSE-1, Sr.Tech- 7, Tech Gr (I)- 2, Tech(II)- 8, Tech(III)- 5 & Helper(I) - 5 = 27 + 1 SSE.

3.4 **Battery Charger and Voltage Stabilizer Repairing Section** – This section works parallel under Block Instrument section. Track Feed Battery Charger of operation 110/6 volts are repaired. The workload is around 20 nos per month.

3.5 **Planning Cell** Deals with preparation of Job Card, PCDO, MCDO, Challan, Gate Pass and Annual Narrative of GM/GRC. Staff strength = Sr. Tech - 1

3.6 **Stores Section** is controlled by one Sr. Section Engineer. For assisting in the issue, receipt & requisitioning of materials, there are other artisan staffs in the section. There are about 460 items. As per requirement, the indent of materials is placed. Items required for the day to day working of the workshop are received, supplied to the different sections (as per requisition) and properly accounted for. Staff strength : SSE-1, Sr. Tech-1, Tech-II-1, Tech-III – 2. Total = 4 + 1 SSE.

3.7 **Establishment & Administration Section** One Ch.OS deals with all the Personnel and Establishment matters of the staff. This section also deals with all sorts of works such as maintaining of attendance & sending the same to Sr.DPO office for preparation of bills, leave, correspondence with Head Office / Divl. Office etc. Staff Strength : Ch.OS-1 , Tech – III – 2, Helper – 1 (Long absent).

3.8 The out-turn performance of the SWS for the financial year (Upto Oct'2019) is as follows:-

Srl. No.	Description	Out-turn (upto Oct-2019)	Demand in 2019-20 (upto Oct-2019)	Supplied in 2019-20 (upto Oct'2019)	On hand position
01	**DLBI**	62	As per periodical overhauling due	70	Overhauled-07 To be overhauled-10
02	**TLBI**	42	As per periodical overhauling due	25	Overhauled- 22 To be overhauled-10
03	**3- Position Relay**	-	02	06	Overhauled-07 To be overhauled-09
3(a)	**DLBI(T&R)**	35	35	35	Nil
3(b)	**TLBI(T&R)**	01	01	01	Nil
04	**Repairing and Modification Track Feed Charger (10 A)**	36	10	48	180(6A)/10 Nos. (10 A)
05	**Block Bell Unit**	-	05	06	01
06	**Track Drilling M/c**	04	02	07	Nil
07	**Point contactor Unit.**	-	-	-	32
08	**Mech. L C Gate Boom Segment**	52	12	18	14
09	**Sliding Gate Barrier**	34	31	35	09
10	**Spindle. Bolt**	40	170	150	125
11	**Panel for L/C gate**	---	01	---	---
12	**Goods Warning& Other Board & B/Board).**	05	09	04	12
13	**Pt. JB**	260	427	230	210
14	**Earth Pipe**	270	115	185	95
15	**L/C Gate Drum Roller/Bolt**	---	20	---	---
16	**Relay Rack**	02	02	02	02
17	**Battery Rack/StoreRack**	10	02	08	NIL
18	**MS Pin**	60	50	150	NIL
19	**Marker ('P', 'C' , 'A'etc)**	26	---	---	26
20	**TL JB Stand**	100	100	100	Nil

Srl. No.	Description	Out-turn (upto Oct-2019)	Demand in 2019-20 (upto Oct-2019)	Supplied in 2019-20 (upto Oct'2019)	On hand position
21	**Cable run arrangement in bridge guarder**	---	---	18	03
22	**Tubular Type Street Light Post.**	---	---	---	---
Out-turn Rs. In Lakh		**206.70**			
Ds-8 value in Lakh.		**4.882**			
Total out-turn Rs. In Lakh.		**206.70**			
Out-turn per employee in Lakh.		**3.229**			

3.9 The Out-turn compared with Total expenditure for the FY 2019-20 is as follows:

Month	Total expenditure (Salary + Material) (in Rs)	Total out-turn (in Rs)	Losses (in Rs)
Oct-19	34,39,480	22,12,300	**12,27,180**
Sept-19	34,36,480	22,51,850	**11,84,630**
Aug-19	43,36,680	30,84,526	**12,52,154**
July-19	36,11,927	34,01,626	**2,10,301**
June-19	46,26,378	31,52,374	**11,74,004**
May-19	38,73,608	33,92,850	**4,80,758**
April-19	46,00,621	31,74,892	**14,25,729**

3.10 The productivity performance and expenditure of SWS/KGP for the last four years is as follows:

YEAR	OUTTURN (Rs. In lakh)	EXPENDITURE (Rs. In lakh)	MAN POWER
2015-16	318.88	434.841	92
2016-17	368.96	534.268	84
2017-18	355.46	513.649	73
2018-19	374.61	561.765	67

3.11 The productivity out-turn statement of SWS/KGP compared with man power for the last four years is as follows:

YEAR	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	TOTAL (Rs. In lakh)	MAN POWER
2015-16	28.15	26	34.01	27.76	21.9	22.91	24.96	25.91	26.4	27.74	27.87	25.2	**318.88**	**92**
2016-17	27.26	33.2	32.78	32.4	36.2	29.02	25.93	30.87	30.69	30.42	32.67	27.31	**368.96**	**84**
2017-18	31.53	33.43	27.69	27.35	33.8	25.98	28.33	29.5	27.84	30.11	31.14	27.71	**355.46**	**73**
2018-19	26.38	29.81	29.27	32.24	30.8	33.09	29.76	33.23	32.56	33.16	34.48	29.77	**374.61**	**67**

3.12 It is seen that that the average incoming receipts of DLBI is 100-110 and that of TLBI is 80-90 per annum. However the total overhauling of both type of block instrument is at par with the target and the same is being complied with from the available staff.

Although the targets for different items have been fixed, it was seen during the course of study that the production of the individual items primarily depends upon the demand of the item (that is placed by the different units) and the availability of raw materials.

3.13 In course of the study it was also seen that a total of 56 DLBI, 13 + 52 old obsolete model i.e. 65 TLBI and 56 (DS-8) + 41 non-repairable i.e. 91 SLBI are waiting for DS-8 since August'2010. The matter has been informed to HQ/GRC but no action has been taken yet.

The costing for the overhauling of the different block instruments are as follows:-

(i) DLBI = Rs. 50,880/-
(ii) TLBI = Rs. 1,63,540/-
(iii) Block Bell Unit = Rs. 4,286/-

3.14 **UMBRELLA works under PH-42 in 2019-20** : Modernization of Signal Workshops all over IR under PB Item No 1028 of SR (regular) "Capital funds" has been sanctioned by Rly. Bd. A total of Rs. 54.16 Cr has been sanctioned over IR.
Most of the machines installed in the Signal Workshop/KGP have crossed their normal codal life and are obsolete. To achieve the quality and quantity of work, it has been proposed to procure new equipments under UMBRELLA works as follows:-

(a) Heavy duty turning lathe,
(b) CNC Air Plasma Cutting Machine,
(c) Hydraulic Plate Bending Machine,
(d) Double Column Planing Machine,
(e) CNC Horizontal Boring and Milling Machine (Tooled up),
(f) CNC Vertical Turning and Boring Machine,
(g) TIG Welding Plant,
(h) Riveting Machine,
(i) Fork Lifter,
(j) Battery Operated Van,
(k) CAD/CAM Software with work station and plotter &
(l) Upgradation of shop floor with AC.

The estimated cost for the above is around Rs. 1512 lakhs.

3.17 **Machines under DS-8 awaiting disposal :**

Srl.No.	Description of the Machine
1	Planing machine
2	Diesel Generator 2 nos
3	Shearing machine 1 no

Machines not working and pending DS-8 :

Srl.No.	Description of the Machine
1	Slotting machine
2	Capstan Lathe
3	Bend saw machine
4	Shaping machine
5	Nibbling machine
6	Power press machine

Machines not working but can be repaired :

Srl.No.	Description of the Machine
1	Lathe Machine (NH 22)
2	Lathe Machine (NH 26)
3	Shaping machine
4	Grinding machine

The above machines are not in working condition since many years. These unserviceable M&P items are either to be disposed off as scrap and those that can be repaired may be put into use after rectification.

CHAPTER-IV

4.1 CRITICAL ANALYSIS :

4.2 During the course of study it was seen that the production in the Signal workshop is getting hampered due to shortage of materials on the whole. During the period from July'19 to Oct'19, materials worth Rs. 1.818 lakhs were only procured.

4.3 Vide para 3.17 of the study report it is seen that the M&P items as listed are either unserviceable or can be repaired and put to use. Necessary action is required for disposal of these M&P items as deem fit. Further, 56 DLBI, 65 TLBI and 91 SLBI (as per Para 3.3) are awaiting for DS-8 and disposal. These unserviceable obsolete Block instruments are to be disposed off.

4.4 From para 3.9 & para 3.10 above, it is seen that the unit is running at a continued loss since 2015-16 till date. During the year 2015-16, the loss was Rs. **116 lacs**, during the year 2016-17, the loss was Rs. **165 lacs**, during 2017-18 the loss was Rs. **158 lacs,** during 2018-19 the loss was Rs. **187 lacs.** Still the unit is incurring a loss of Rs. 70 lacs for the FY 2019-20 (till Oct'19)

4.5 Modernization of the SWS/KGP has been planned under UMBRELLA works. However, it is revealed that these M&P items shall be on replacement or additional account for bending, folding and cutting activities which are presently being performed manually. The specific items that shall be manufactured are Rectangular Electrical Lifting Barrier Boom (Drg. No. RDSO/S/11601), Point JB, SS Location Box (SS modular type apparatus case) & Point machine cover from sheet metal.

4.6 Presently, the items like Spindle bolt, Ground connection, Foundation bolts, Cam roller, socket for fractured boom, Concave roller & bush (for ESB) are not being manufactured due to lack of proper machinery. However, these can be manufactured after modernization materializes but their specific demand is unknown at present.

4.7 The present men-on-roll is able to cater to the demand of Block Instruments, Block bell unit & Track Feed chargers placed on the SWS. The Mechanical section is unable to perform upto the maximum capacity due to varied factors right from lack of raw materials, demand, obsolete/improper M&P items.

CHAPTER-V

5.0 RECOMMENDATIONS :

5.1 **Recommendation – I: The flow of materials required for the working of SWS is required to be streamlined.**

5.2 **Recommendation –II: The unusable & unserviceable Block instruments which are lying since long in SWS (vide para 4.2 above) may be declared as scrap by the competent authority and disposed off suitably. Further, the unusable Machines available in the shop may also be suitably disposed off or rectified (and put to use) as deem fit**.

5.3 **Recommendation – III : From para 4.3 above, it is seen that the unit is running at a continued loss since 2015-16 till date. Steps are required to minimize these losses, either by revaluating the Price List of the finished materials or otherwise.**

5.4 **Recommendation – IV : The 33 vacant posts vide para 2.3 above may be immediately surrendered outright without affecting promotional prospects of the incumbents.**

CHAPTER-VI

6.0 Financial Evaluation

In reference to the recommendations made in the study report the financial evaluation on the basis of surrendering 33 'vacant' posts is as under:-

Srl. No.	Desgn	Level/ GP	No. of posts	Avg Pay	Monthly cost per staff DA @ 17%	Total cost per month
1	SSE	L-7 (Rs.4600)	4	51750	60548	242192
2	JE	L-6 (Rs.4200)	3	40800	47736	143208
3	Tech - I	L-5	16	33650	39371	629936
4	Tech - II	L-4	6	29400	34398	206388
5	Helper	L-1	4	20750	24278	97112
TOTAL			33			13,18,836

The annual savings due to surrender of 33 'vacant' posts = Rs. 13,18,836 x12
= Rs. 158,26,032/-
Say 158 lakhs per annum

CHAPTER – VII

7.0 SYSTEM IMPROVEMENT YIELDING BETTER FINANCIAL SAVINGS

For saving such huge losses, we have to go in for modernization of the SWS/KGP. Modernization can be implemented by any/some of the following methods :-

- Present trend is that the signaling equipments are shifting from Mechanical type of working to Electrical & Electronic type, SSI Components & Units (including repairing of various cards), Axle counters – Digital & Analogue type, can be repaired after providing training to the staff.
- Point Earth connections, Lug for point machines, can be manufactured
- Tri-colored LED Signals can be manufactured/ repaired.
- Considering transfer of works from Open line, POH of Data loggers: Presently private firms are maintaining the same. If technical know-how is provided and proper training is imparted, then the staff of SWS/KGP can repair these.
- IVRS system, Station Auto display, Announcement systems, Moving visual display & digital clock (mother + slave clocks) repairs are presently being undertaken by out agency. If requisite training is imparted, then the same can be repaired.
- Axle counters can be repaired.
- The mechanical items of RRI panels can be manufactured at the SWS/KGP.
- Nickeling plant to be developed for nickeling of all the parts available in block instrument.