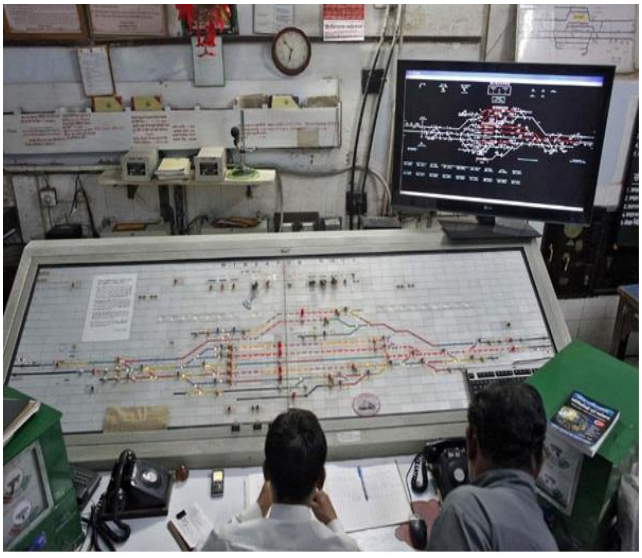
SOUTH EASTERN RAILWAY

STUDY ON THE

REQUIREMENT OF CABINMAN & CABIN MASTERs

SUBSEQUENT TO THE INTRODUCTION OF

CENTRAL PANEL IN RNC DIVISION



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STUDY NO. EFF/902

S Y N O P S I S

1.	Name of the work study		Requirement of Cabinmen / Cabinmaster subsequent to the introduction of Central Panel in RNC Division.
2.	Terms of reference		The study has been taken up in the Annual Programme to assess the generation of surplus posts due to technological development by way of introduction of Central Panel in RNC division.
3.	Aim		To make an assessment of Cabinmasters due to commissioning of central panels in the different stations over RNC Division and also considering those stations planned for commissioning of Central Panels in the near future.
4.	Projected manpower re-deployment/ surrender.		Surrender : 25 posts.
5.	Anticipated/projected savings		**Rs. 110** lakhs (approx)
6.	No of recommendations made		01 (One)
7.	Critical analysis & observations		As there are no stations remains in D/L Section, with block instrument in end cabins, the post of Cabin Man has become surplus
8.	Brief note on recommendations		**All stations in the D/L Section have been converted to Central Panels/ EI. As such, all the available 25 posts of CM to be surrendered outright.**
9.	Department concerned		OPERATING

C O N T E N T S

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C H A P T E R - I

1. INTRODUCTION :

Indian Railway is rapidly proceeding towards modernization in all fields. The 11th Five Year Plan has reiterated that the pace of railway modernization needs to be vigorously accelerated and that a paradigm shift in provision and delivery of rail services is called for. The need of the day is to concentrate on the core activities of infrastructure and operation. The action plan for the future should be planned with a view to:-

- Achieve a quantum reduction in manpower requirement for sustaining financial viability of IR with rising manpower costs and impact of the 7th Pay Commission recommendations.
- Lateral thinking to identify unconventional areas for reduction of dependence on manpower.
- Switch over from the conventional labour-intensive working methods to technology-intensive methods to reduce human intervention to a bare minimum.
- Use of such systems that require much less maintenance, review, periodicity of maintenance schedules and improves reliability.
- Modernization in all fields primarily with a view to ensure safe running of the system and simultaneously increase the average speed.

Due to introduction of modern equipments / technology in almost all the fields, the involvement of field staff has got reduced to some extent. This has resulted in the related field activities getting redundant and a proportionate surplus in manpower.

The Lever frame in the end cabins have been replaced with Central Panel Interlocking (CPI)/ Route Relay Interlocking (RRI), Solid State Interlocking (SSI) and Electronics Interlocking (EI) with computer panel. Panel Interlocking is the system used in most medium-sized stations on IR. In this, the points and signals are worked by individual switches that control them. Route Relay Interlocking is the system used in large and busy stations that have to handle high volumes of train movements. In this, an entire route through the stations can be selected and all the associated points and signals along the route can be set at once by a switch for receiving, holding, blocking or dispatching the trains. In recent years, interlocking accomplished by modern integrated electronic circuitry instead of electromechanical relay systems has come into use in the form of Solid State Interlocking.

In the conventional system of interlocking arrangement, Operating staff are required to man three different locations i.e, two cabins in either end of the station and the third in the middle of station at SM office. The Station Master in the station is the overall in-charge of the station and responsible for conducting quick and safe train operation on his rostered hour.

In conventional system the train operation which required activity of three men from three place has been converted to single man operation by switching the system to advance paneling.

Introduction of track circuiting/ axle counter with the commissioning of Central Panel, RRI & SSI has modified the three working points to only one. It has further eliminated the percentage of manual errors and has enhanced the efficiency, speed and safety in operations by preventing conflicting operations.

The present study on the '*requirement of Cabinmasters and Cabinmen in the RNC division due to introduction of Central Panel'* has been taken up with a view to identify those redundant posts consequent to modernization in this field.

M E T H O D O L O G Y

1. Collection of the details of workload particulars.

2. Interaction with concerning field officials.

3. Direct observation of the present pattern of working comparing the conventional pattern.

4. Central Panel works completed in last three year & works under progress

5. Critical examination of the existing system of working and the deployment of staff thereof.

C H A P T E R - II

2 STAFF STRENGTH

2.1 The present sanctioned and on-roll strength of the Cabin Master (CM/SWM), Cabin Man (CLM) & PM 'A' & PM 'B' in RNC division is as follows:-

Design	GP	Sanctioned Strength	On-roll	Vacancy	Remarks
Cabin Man	2400	84	59	25	
PM 'A'	1900	415	388	27	
PM 'B'	1800	46	126	-80	
PMB/TGM	1800	71	0	71	
TGM	1800	16	3	13	
TOTAL		**632**	**576**	**56**	

2.2 Stations wise staff position of Cabin Master (SWM), CM, TPM, TGM :-

2.3 **MURI-BRKA S/L Section**

Sr. No	Station	Panel or Lever frame	No. of end Cabins	No. of T/Gate	On-Roll			
					SWM	CLM	PM	Total
1	BLNG	Lever	2	-	0	5	7	12
2	HRBR	Lever	2	-	0	5	7	12
3	GRE	Lever	2	-	0	5	10	15
4	BRKP	Lever	2	-	0	2	10	12
5	MAEL	Lever	2	-	0	3	9	12
6	RMT	Lever	2	-	0	3	9	12
Total					**0**	**23**	**52**	**75**

2.4 **HTE - ORG S/L Section**

Sr. No	Station	Panel or Lever frame	No. of Cabins	No. of T/Gate	On-Roll			
					SWM	CLM	PM	Total
1	BLRG	L	2	-	0	0	10	10
2	LOM	L	2	-	0	0	9	9
3	KRRA	L	2	-	0	0	9	9
4	GBX	L	2	-	0	1	9	10
5	BKPR	L	2	-	0	0	10	10
6	PKF	L	2	-	0	2	7	9
7	PKC	L	2	-	0	0	11	11
8	KRKR	L	2	-	0	0	11	11
9	MCZ	L	2	-	0	1	9	10
10	BANO	L	2	-	0	1	14	15
11	KNRN	L	2	-	0	1	8	9
12	TAX	L	2	-	0	2	9	11
13	PBB	L	2	-	0	0	12	12
14	ORGA	L	2	-	0	1	10	11
Total					**0**	**9**	**138**	**147**

2.5 **MURI-CNI S/L Section**

Sr. No	Station	Panel or Lever frame	No. of Cabins	No. of T/Gate	On-Roll			
					SWM	CLM	PM	Total
1	ILO	L	2	-	0	2	9	11
2	TRAN	L	2	-	0	1	10	11
3	SSIA	L	2	-	0	2	10	12
4	TUL	Panel	0	2	0	2	11	13
5	LTMD	L	2	-	0	1	10	11
6	JHMR	L	2	-	0	2	9	11
7	GDBR	L	2	-	0	4	8	12
Total					**0**	**14**	**67**	**81**

2.6 **RNC - LAD S/L Section**

Sr. No	Station	Panel or Lever frame	No. of Cabins	No. of T/Gate	On-Roll			
					SWM	CLM	PM	Total
1	PIS	CP	-	0	0	0	7	7
2	TGB	CP	-	1	0	0	7	7
3	NJA	CP	-	0	0	0	4	4
4	LAD	Rudimentary	-	0	0	0	10	10
Total					**0**	**0**	**28**	**28**

2.7 **TUL - JAA D/L Section**

Sr. No	Station	Panel or Lever frame	No. of Cabins	No. of T/Gate	On-Roll			
					SWM	CLM	PM	Total
1	THO	CP	-	2	0	0	12	12
2	JAA	CP	-	2	0	0	12	12
Total					**0**	**0**	**24**	**24**

2.8 **MURI - HTE D/L Section**

Sr. No	Station	Panel or Lever frame	No. of Cabins	No. of T/Gate	On-Roll			
					SWM	CLM	PM	Total
1	MURI	EI	-	-	0	0	43	43
2	SLF	CP	-	1	0	1	8	9
3	KITA	CP	-	-	0	1	7	8
4	GATD	CP	-	-	0	0	5	5
5	JONA	EI	-	1	0	2	10	12
6	GAG	CP	-	1	0	1	6	7
7	TIS	CP	-	2	0	1	16	17
8	NKM	CP	-	-	0	0	13	13
9	RNC	EI	-	1	0	2	32	34
10	HTE	EI	-	-	0	5	68	73
Total					0	**13**	**208**	**221**

2.9 **SUMMARY**

Sr. No	Section	No of Stns	No. of Cabins	No. of T/Gate	On-Roll			
					SWM	CLM	PM & TGM	Total
1	MURI-BRKA S/L	6	12	**	0	23	52	75
2	HTE-ORG S/L	14	28	**	0	9	138	147
3	MURI –CNI S/L	7	12	2	0	14	67	81
4	RNC-LAD S/L	4	**	1	0	0	28	28
5	TUL- JAA D/L	2	**	4	0	0	24	24
6	MURI-HTE D/L	10	--	6	0	13	208	221
Total					**0**	**59**	**517**	**576**

C H A P T E R – III

3.0 EXISTING SYSTEM OF WORKING

3.1.1 CONVENTIONAL SYSTEM :

In the conventional system of interlocking arrangement, the train operations working has to be conducted from three places of a station i.e, cabins in both end & SM's office at station.

(a) Working of the SM at SM's Office of a station: The job in this place is carried out by a responsible man holding post of ASM/SM/DY.SM or SS-II. The rank depends upon gravity of the Station & traffic therein. He is the shift in-charge and responsible for safe & punctual train operations. In some road side stations in they have to do the commercial work in addition of the operating job. For train operation he is provided with control phones for communication with Divisional control office and acts as per advice of the section controller. The train operations are either through passing of a train or berthing or preceding or crossing or other type of operations like shunting etc. Being conventional type of working the SM has to give instructions in detail about the operation to the staffs of the end cabins like train number, line in which the train to be admitted & dispatched, will pass through or stop, whether any crossing or precedence to the train etc. For operation of signals the SM has provided with a Slide Box, operating the slides from his part and slot from other end of the cabin a signal can only be taken off. Thus it requires combined effort of three men to operate a signal and make movement of the trains. In D/L section DLBIs are generally provided in the end cabins. Taking and granting of Line Clear, point & signal operations are conducted from the cabin by cabin man.

(b) Working of SM/Cabin Master/SWM from end cabins: In D/L Section CM/SWM have competence of operating DLBI from end cabins. Taking & Granting of line clear from adjacent station as per advice of central SM. Further setting of points for nominated route and operate signals by lever operations are the nominated job of the staff on duty at the cabin. The SM from SM Office consulted with SCR about programme of a train in pipe line and accordingly advices the SM/CM of end cabins. For receiving a train in a station, first he give permission of granting line clear to the SM/CM of the train approaching cabin and communicates the message to the CM/SWM of the other end cabin (Dispatch side). After getting out-report of the train from the rear station SM/CM/SWM informs the same to the SM who gives him permission to make route & take off signal for the nominated line with exchanging of Private Number. By the same time he also advices the CM/SWM of the other end to set route for onward journey from his end & then give slot for taking off reception signal. The CM/SWM of the receiving end cabin makes the route with the help of CLM. After complete arrival of the train, the CM/SWM of reception side normalizes the lever to its normal position. The entire operation is being monitored by the SM in-charge meticulously obeying all safety rules. The mechanical and electrical interlocking arrangements in Cabins as well as in SM office (Slide Box) regulate any conflict operation.

3.1.2 **MODERN SYSTEM :**

The innovation of Central Panel Interlocking system which includes RRI, SSI or EI for train operations changes the entire operational working drastically. The interlocking arrangements obeying all the safety bindings are suitably managed by this system through electronic peripherals. The system not only helps in safe working & fast train operation but, is easy and reduces human involvement to a great extent. All the manual jobs that includes point changing, point locking, signal changing etc., which were done by pulling levers have now been replaced by means of electrical power & done through motor operated points, relays & electronic chips. The entire operation is carried out from a panel board or computer monitor available in the SM's office. The system does not allow adopting any shortcut method by human intervention which violates safety rules. It also disallows to carry any conflict operation which may endanger safety in train movement.

In Central Panel system the individual points are set by turning switches to N/R position in SM panel. The point operated by motor fitted in the point location further electrical locking indication appeared the panel then SM take off the concerned signal. In RRI system the entire route are set by simultaneous pushing of two buttons (i.e, route button and signal button). All the points required to operate for making such route are operated automatically and after proper setting and locking the concerned signal take off for train movement. Hence, the entire job in this system is handled from one location by a single man.

C H A P T E R – IV

4.0 Critical Analysis

4.1 Due to the changes that have taken place in the areas of operational working, the conventional lever frames in the end cabins have been replaced with Central Panel Interlocking (CPI)/ Route Relay Interlocking (RRI) / Solid State Interlocking (SSI) or EI. This has resulted in lesser utilization of man-power as compared with the earlier system of working. At present, there are 26 stations in S/L section and 1 station in D/L section where stations are still operated from end cabins by means of lever operations. To man the stations the sanctioned and on roll of the operational staff are as given in para 2.1 above. All the stations in the division are obtained sanction of converting conventional system to Panel system, however in last three years some stations like TUL in 2013, MURI, HTE in July 2015, RNC in 2016 have converted into modern panel system. JONA, GRE, RMT have been converted in 2017-18.

4.2 As such, there is a requirement of ASMs and TGM for operation of the Central Panels/ EI and for manning the LC gates. Hence the posts of Cabinman are no longer required in such stations.

C H A P T E R - V

5.0 RECOMMENDATIONS :

Recommendation – I : As the Division has no station remains in D/L section with block instrument in end cabins, the post of Cabin Man became surplus. As such the study team is in the opinion of surrendering all the 25 vacant posts of existing Cabinman.

C H A P T E R - VI

6.0 Financial Evaluation:

In reference to the recommendations made in the study report the financial evaluation on the basis of surrendering 25 vacant posts of Cabinman is as under:-

Surrender of 25 posts							
Sl	**Desgn**	**Scale of pay**	**No.of posts**	**Avg. Pay**	**DA @ 7 %**	**Monthly cost per staff**	**Total Cost per month (`)**
1	Sr. Cabinman	L-2	25	34200	2394	36594	914850
Total			25				914850

The annual savings on account of surrender of 25 posts = **914850** x 12

= 109,78,200

Say = 110 lacs per annum approx