EASTERN RAILWAY

WORK STUDY REPORT
ON
REVIEW OF STAFF STRENGTH VIS-À-VIS WORKLOAD OF CABINMAN AND CABIN-MASTER CONSEQUENT UPON THE CHANGED SCENARIO UNDER OPERATING DEPARTMENT IN ASN DIVISION.

(STUDY NO.WSER-02/19-20)

(Submitted on: 24.04.2019)

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ACKNOWLEDGEMENT

The study team would like to acknowledge its gratitude to Sr.DOM/ASN and Sr.DPO/ASN for welcoming the study team to conduct the subject study in this sphere of activities of Cabin-Man & Cabin- Master over ASN division.

The study team is always thankful to TI/ASN and all other staff for their unstinted help rendered to the study team to steer the subject study in positive direction.

TERMS OF REFERENCE

The subject work-study has been conducted based on the following terms of references –

i) Existing sanctioned strength and MOR of Cabin-Man & Cabin- Master as on 31.03.2019.

i) Examining the existing deployment of staff of specific category e.g. Cabin man & Cabin- Master in Operating department over ASN division.

iii) Examining their utilization on present deployment depending upon their Workload.

METHODOLOGY

In conducting the subject work study, the study team has applied the following methodology.

i) The study team has recorded the existing system of working in each category.

ii) A threadbare discussion was made with the supervisors and staff concerned.

v) Critically analyzed the deployment of staff against existing workload.

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SUMMARY OF RECOMMENDATION

Sl.No.	Recommendation	Para ref.
1	Considering the facts and figures discussed in the study report, the study team recommends that 14 posts of Cabin Man and 33 posts of cabin-master working under Sr. DOM/ASN should be made surplus and surrendered immediately. Thus, the proposed sanctioned strength of Cabin-Man and Cabin-Master under Operating Department in Asansol Division would be 171 (185-14) and 104 (137-33) respectively.	3.2.1

CHAPTER-I

1.0 **INTRODUCTION:**

1.1 In the era of advancement of modern technologies, Indian Railway has always kept pace with the introduction of technological advancement.

The object of modernization is to maintain safety, security and punctuality. In addition to that, with the advancement of technology, Railway has also upgraded the staff by giving training to acquaint with modern technology, so that they can keep pace with the line.

1.2 Asansol Division was established in 1925. This is one of the oldest divisions on the Indian Railways and has always been in the forefront of operations, both freight and passenger. As far as Eastern Railway is concerned, Asansol Division is referred to as the heart of operations, being at the crossroads of the Grand Chord route via Gaya and the main line route via Patna.

The division extends on the main line from the distant signal of Khana junction in the east to distant signal of Jhajha station in the west. On the Grand Chord line, the administrative control of Asansol Division is upto the distant signal of Pradhankhunta. The territorial jurisdiction of this division also extends over such branch lines as Andal-Sainthia, Andal–Tapasi–Barabani–Sitarampur, Madhupur–Giridih, Jasidih–Baidyanathdham and Jasidih to Dumka. It serves the densely populated states of West Bengal, Bihar & Jharkhand covering seven districts viz. Bardhaman and Birbhum in West Bengal, Jamui in Bihar & Dhanbad, Jamtara, Giridih, Deoghar and Dumka in Jharkhand.

With a total of 594.9 route kilometers, the division has the unique distinction of having quadruple lines (two up and two down line) from Khana to Sitarampur.

Traffic on the division is predominantly freight with coal as the principal commodity loaded from Raniganj, Mugma, Jamtara and Giridih regions. Other goods include cement loaded at DCW Durgapur, UTCL Durgapur and Lafarge Raniganj, Steelmaterials from Durgapur and IISCO, Petroleum product from I.O.C, Rajbandh and parcel traffic originating from Asansol, Durgapur, Raniganj, Madhupur and Jasidih.

1.3 The division comprises of ‘A’ route, a quadruple electrified section between Khana to Sitarampur with MACL signaling, a double line automatic signaling territory between Sitarampur to Chotoambona. On ‘B’ route, a double line section between Sitarampur - Jhajha with electrified branch single line between Jasidih - Baidyanathdham section and non-electrified branch single line between Madhupur-Giridih and Jasidih – Dumka. On ‘E’

route a twin single line working on electrified territory between Andal-Pandabeswar and double line non-electrified territory between Pandabeswar - Sainthia with MACL signaling.

1.4 Due to modernization of signaling system by providing "Multi Aspects Colour Light Signaling" (MACL) and Panel Interlocking/RRI from orthodox Lever Frame system, the workload in Optg. Deptt. particularly on Cabin-Man & Cabin-Master category, is decreasing day by day.

As such, the requirement of manpower has become less as compared to earlier methodology. Therefore, the competent authority did not take any interest to fill up the vacancies especially on non safety categories.

1.5 Indian Railway is facing tremendous financial crunch after implementation of the 7th pay commission which will affect the financial growth in Railway. Operating ratio is gradually increasing in Railways. Though Indian Railway is not a business organization but to survive, it is always essential to make the organization in profit i.e. operating ratio should be less than 100.In Performance Efficiency Index shown in the corporate plan booklet published by the Eastern Railway, the "Operating Ratios" from 2015-16 to 2018-19 are as given below –

Operating Ratio

2015-2016	180.75%
2016-2017	165.25%
2017-2018	181.15%
2018-2019	168.66% (Proposed)

In view of the above, Eastern Railway has taken serious consideration to make the operating ratio within limit (below 100%) by decreasing the Working Expense and increasing the earnings. For this purpose, Rly Board issued nos. of circulars, orders, etc to minimize Expenses and increase Earnings. The Zonal Railways also implement various measures for financial discipline.

1.6 Considering the above, the railway authority has suggested to conduct the subject study in order to provide need based requirement of Cabin-Man & Cabin-Master in Operating department in Eastern railway consequent upon the changed scenario. The subject work-study has been undertaken by GM's Efficiency Cell/E.Rly during the current financial year 2019-2020 to improve the productivity index of the railway. As per terms of reference, the study team has thoroughly observed the activities and deployment of staff at different station/unit and critically analyzed the involvement of staff to ascertain their optimum utilization and to find out the need based requirement.

CHAPTER-II

2.0 EXISTING SCENARIO & CRITICAL ANALYSIS:

2.1 Electrically operated interlocking

In the more advanced electrical or electronic interlocking schemes, the points and signals are worked from one integrated mechanism in a signal cabin which features a display of the entire track layout with indications of sections that are occupied, free, set for reception or dispatch, etc. The interlocking is accomplished not by mechanical devices but by electrical circuitry -- relays and switches in older electrical or electro pneumatic systems, and computerized circuits in the newer electronic systems.

Panel Interlocking (PI) 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 (RRI) 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 station 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 trains.

Regardless of whether the mechanisms are controlled manually or by electronic circuits, and whether they are operated mechanically or electrically, all interlocking schemes usually enforce several or all of the following rules:

- No signal can be pulled off unless corresponding points are set correctly.
- Facing points are locked to the corresponding route when a signal is pulled off.
- Signals for conflicting movements cannot be pulled off simultaneously.
- Points for conflicting routes cannot be set simultaneously.
- Trailing points are locked to the rear when a signal is pulled off.
- Distant, warners, repeaters, etc. cannot be pulled off unless the corresponding stop signals are pulled off.
- Gate stop signals cannot be pulled off unless level-crossing gates are blocked to road traffic.

The description of the possible routes that can be set, and the corresponding dispositions of points and signals are found in the locking table and selection table for a station. The locking table lists the signals and points controlled; the levers at signal boxes (or control panels at control centres) which operate various signals and points; which signals and points are locked (and in what position) when other signals are pulled off or points set; which track circuits are clear or occupied; etc.

The selection table lists the allowed non-conflicting routes that can be set. The terms route selection, route locking, route holding, and route release are used to describe the various steps in the process of picking a route for a train.

In various semi-automated systems of interlocking the electrical or electromechanical mechanisms or the electronic circuitry takes over a large part of the bookkeeping details that determine the sequences in which signals must be pulled off or points set to assign a route to a train. In the more primitive mechanical interlocking systems, such a sequence has to be manually followed; for this purpose the locking and selection tables are used by the signalman, along with lever leads which indicate for each signal lever which other levers must be set or cleared.

RRI and PI equipment is from Siemens and some British manufacturers. In recent years interlocking accomplished by modern integrated electronic circuitry instead of electromechanical relay systems has come into use (Solid State Interlocking ('SSI'). SSI equipment is manufactured by RDSO. There are three levels of interlocking used by IR.

The concept of RRI and Panel Inter Locking has already been introduced in different stations in Indian Railway to extend smooth, better and hazardless train movement. The said operational method based on modernized technology obviously control the movement the trains more effectively in comparison to previous system of working. Aiming at the target of smooth, easy, safe and effective movement of train, the PI/RRI system of working has phase wise been introduced in different stations in Asansol division. After introduction of PI the function of Cabin-Man & Cabin-Master in End cabins has become nil..

2.1 **Cabin-Man:**

The sanctioned strength and on roll position of Cabin man in ASN division as on 31.03.2019 is given below (Annexure-A).

SL	Category	Scale	SS	MOR	Vacancy
1	Cabin Man-I	5200-20200-2400/-	150	138	11
2	Cabin Man-II	5200-20200-1900/-	35	32	4
TOTAL			185	170	15

2.1.1 The station wise sanctioned strength and their deployment is given below.

Sanctioned Strength and MOR position of Cabin man										
Sl No	Station	Cabin man-I			Cabin man-II			Cabin man (I & II)		
		S/S	MOR	Vac	S/S	MOR	Vac	S/S	MOR	Vac
1	DCOP	5	5	0	0	0	0	5	5	0
2	OYR	6	5	1	2	1	1	8	6	2
3	UDL	54	52	2	10	12	-2	64	64	0
4	KPK	4	3	1	0	1	-1	4	4	0
5	ASN	20	22	-2	5	3	2	25	25	0
6	STN	10	8	2	0	2	-2	10	10	0
7	SCN	2	2	0	0	0	0	2	2	0
8	TOP	4	0	4	0	0	0	4	0	4
9	BBI	2	0	2	0	0	0	2	0	2
10	MDP	5	5	0	0	0	0	5	5	0
11	JSME	4	4	0	0	0	0	4	4	0
12	BDME	3	2	1	1	1	0	4	3	1
13	GRD	3	2	1	2	3	-1	5	5	0
14	MMD	4	1	3	0	0	0	4	1	3
15	JGD	4	3	1	0	1	-1	4	4	0
16	TI/DGR	1	1	0	0	0	0	1	1	0
17	TI/HQ	3	2	1	0	1	-1	3	3	0
18	TI/PAW	1	2	-1	2	1	1	3	3	0

19	TI/STN	1	1	0	1	1	0	2	2	0
20	TI/MDP	1	2	-1	2	1	1	3	3	0
21	DSEY(SM)	7	8	-1	6	4	2	13	12	1
22	HSME(YM)	6	8	-2	4	0	4	10	8	2
TOTAL		**150**	**138**	**12**	**35**	**32**	**3**	**185**	**170**	**15**

2.1.2 The study team has conducted the subject work study of Cabin-Man deployed under CYM/STN including STN yard and under SM/MMD. The present status of cabin, the deployment of cabin man and their work load are considered while conducting the study.

2.1.3 The schedule of working of Cabin-Man is given below:-

1. He must check all essential equipments made over by his relief and if any discrepancies are found report the same to the station master on duty.

2. He must ensure that normal position of every fixed signal is 'ON' at all times except when taken off for a train and night back lights of signals are burning.

3. Before permitting indoor ASM on duty under exchange of private numbers for granting line clear for train to station in rear, he must ensure that conditions for granting line clear as laid down in rules are fulfilled.

4. He must ensure that the reception or departure path is clear and free from obstruction; route is correctly set, facing points locked and level crossing are closed and locked against the rod traffic for Reception/dispatch of trains.

5. He is responsible to ensure that the reception line is clear up to the adequate distance required under the rules before lowering signals or releasing a slot for the reception of a train.

6. The cabin man will watch the safe passage of all trains leaving or arriving at the station. Should he notice any abnormality he shall inform the indoor ASM on duty at once.

7. He shall not alert route under moving wheels.

8. He will maintain register and will record all messages under exchange of private number with indoor ASM and gateman on duty to connection with train passing shunting closing of level crossing etc.

2.1.4 **CYM/STN:**

There were 4 nos of cabin located in different direction for smooth functioning of yard as well as timely placement of rake for drawing and dispatch. These cabins are:-

1) East Outer Cabin- Already Interlocked. There is no liver frame.

2) East Cabin- It was operated with Liver frame for Yard movement.

3) Hump Cabin- It was operated with Liver frame for Yard shunting

4) Kulti Link Cabin-It was situated at mid point in between Main line and Grand Chord line having points with the relief line with STN yard. It is liver operated cabin.

Cabins	**Liver frames**
1) East cabin	
2) Hump cabin	11
3) kulti link cabin	10

Avg. 20-25 movements/day (Passenger, Mail/Exp.and goods) is recorded.

The sanctioned strength and On Roll position of Cabin man is given in Sl No.6 of the table provided in para 2.2.

2.1.5 **Reviewed result/Need based requirement of Cabin-Man:**

On being scrutinized all aspects, it is revealed that the operational time for setting points as well as giving signals for safe running of trains by means of panel interlocking system of working has become easy due to single point operation of both signals and points by operating switches of the panel board as per requirement. Instead of multipoint operation as previously done by operating lever frame after getting consents from cabins and station master, the revised process is more acceptable. The present system of working based on PI type of operation would not leave any scope of continuing the previous process of lever frame operation which justifies the withdrawal of cabin man from cabins. In view of above, the study team does not feel any necessity to retain the posts of cabin man as there is little scope of utilization of cabin man in ASN division, while PI system has already been introduced in most of the stations in ASN division.

Instead of previous system of working, one central panel cabin has been commissioned for operating PI system by means of switches to be used for giving signals and point's settings. The workload of cabin man has reasonable been reduced resulting in surplus of cabin man.

To match with the modern slogan of modern management, "Much outturn with less manpower", this division is always performing its best to minimize its workforce in various fields of activities introducing modern equipment or by changing its mode of operation.

2.1.6 **CYM/STN**

During field study the study team noticed that Route relay Inter- locking (RRI) is introduced at East cabin and Hump cabin on dated Nov'18 and Panel interlocking (PI) is introduced at Kulti-link cabin on Feb'18.

Opinion:
Due to closure of the activities of cabin man under CYM/STN, the study team opines that the sanctioned strength of Cabin-Man at STN should be rendered as surplus. **Hence, 10 posts of Cabin-Man should be made surplus.**

2.1.7 **SM/MMD**

Maheshmunda (MMD) Railway station is situated in Baidadih, Jharkhand. Here are some trains that are passing through Maheshmunda railway station like Grd Link Pas Exp, Grd-mdp Passenger, Mdp-grd Passenger, Koaa Pnbe Exp, Pnbe Koaa Expres, and many more.

Previously Liver operated cabin was there for giving train passing signals. During field observation the study team noticed that the Panel Interlocking (PI) is introduced on May'18.

It is mentioned earlier that after introduction of PI, the activities of Cabin-man has become nil. The sanctioned strength and On Roll position of Cabin man is given in Sl No.14 of the table provided in para 2.2.

Opinion:
Due to closure of the activities of cabin man at MMD cabin, the study team opines that the sanctioned strength of Cabin-Man at MMD should be rendered as surplus. **Hence, 4 posts of Cabin-Man should be made surplus.**

2.2 **Cabin-Master:**

The duty roster of Cabin-Master is given below:

He shall be responsible for operation of Block Instrument and for granting and asking Line clear properly for receiving and dispatching of trains. In case of defective track circuits he will be responsible for checking of physical clearance from the place of work of the Line concerned.

i) He shall handle the control panel himself when on duty and shall not permit any un- authorized person to operate it.

ii) He shall maintain TSR and other connected record/documents in good shape and ensure that all entries are completed and are up to date.

iii) He shall keep SMs' control keys of control panel in his personal custody whenever he is require to leave his office even for short duration and also when danger from unauthorized person entering the cabin is apprehended.

iv) He shall attend the control panel and give arrival departure of trains promptly and shall carry out instruction given by supervisors provided these do not violate safety rules & procures.

v) While on duty, he shall ensure that all points and signals are in good working condition an all the registers, records, pertaining to train passage are completed in all respect before handing over the charge.

vi) He shall personally ensure that conditions for taking 'off' the reception signals are fulfilled and the clearance of the line under his jurisdiction is verified as per SWRs before actually pressing the relevant button for taking off the signals.

vii) He shall ensure from indications available in the control panel that the signals are burning brightly and are giving correct indications.
viii) He shall ensure that SR 5.19(vi) is completed with after reception of each train.

ix) He shall allow shunting in consultation with SM on duty between the arrival / departure of trains or during slack period as frequently as possible to the maximum extent.

x) He shall come of duty after taking complete rest and shall not perform his duty under the influence of drugs or intoxicants.

xi) He shall keep his reference books up to date, posted with latest correction slips and shall keep himself fully conversant with the extant rules. He shall keep his books, readily available for inspection when asked to do so.

xii) He shall not absent himself from duty without prior permission of his superiors. He shall not leave his duty unless properly relieved by his relief and shall not exchange his duty without prior permission from his superiors.

xiii) He shall not consider himself relieved of duty unless he has completed transactions of train for which he has given/obtain line clear till the complete arrival of such trains.

xiv) He shall always obey the lawful orders of his superiors so long as they do not contravene any of the extant rules in force.

xv) He shall ensure that proper indications of points, signals, track, circuits, crank handle, level crossing gate etc. are displayed at their proper places.

xvi) He shall ensure clearance of running lines in case of failure of track circuits.

xvii) He shall report all abnormalities verbally to the Station Manager/Sectional TI and other concerned agencies.

xviii) He shall be in proper neat and clean uniform while on duty.

2.2.1 The sanctioned strength and on roll position of Cabin-Master in ASN division is tabulated below.

Sanctioned Strength and MOR position of Cabin-Master				
Sl No	Station	Cabin-Master		
		S/S	MOR	Vac
1	PAN	5	5	0
2	RBH	8	8	0
3	OYR	8	6	2
4	UDL	26	20	6
5	RNG	8	8	0
6	KPK	8	8	0
7	ASN	9	8	1
8	BCQ	9	8	1
9	BRR	4	4	0
10	UKA	8	8	0
11	RNPR	1	0	1
12	VDS+KEE	9	3	6
13	MDP	6	4	2

14	NPZ	4	4	0
15	JSME	4	4	0
16	LHB	4	4	0
17	TI/DGR	3	0	3
18	TI/HQ	3	1	2
19	TI/STN	3	0	3
20	TI/MDP	3	0	3
21	HSME(YM)	4	1	3
TOTAL		**137**	**104**	**33**

2.2.2 After introduction of PI at cabins, the cabin-masters were allowed after their proper training at the relevant training centre's to operate panel vide railway board's letter No. 96/safety-1/13/4 (Annexure-A).
But, in present situation, replacement of Cabin-Master is inevitable due to introduction of new activities and up dated modern technologies in day to day train operation such as Computerization of Train Signal register (TSR), Solid State Interlocking (SSI), Block Proving by Axle counter (BPAC), Universal Fail-Safe Block Interface (UFSBI), Data logger, LVCD Axle Counter etc.

Cabin-masters are selected from Gr.D staff through 100% promotional quota. Simultaneous operation of Computerized TSR, feeding of data in computerized TSR format along with the train passing duty in the Quadruple Rajdhani routes by a Cabin-Master may put at risk in safe and un- interrupted train operation.

2.2.3 On double line sections, instructions have been issued vide Railway Board's letter No. 2002/Sig/P1/1, dated 09.07.2002 (Annexure-B), that at all stations with Central Panels an additional ASM or a qualified Group C staff will be provided in each shift who will oversee and check through trains, exchange all right signals with the train crew, handle the job of shunting at the station, issue pilot memo, caution orders etc.

Again, vide Railway Board's letter No. 2002/Sig/P1/1, dated 14.03.2007 (Annexure-C), justified the deployment of 2nd ASM depending on variable factors like traffic density, number and type of level crossing gates, type of block sections, quantum of commercial duties, shunting in yard and sidings etc.

From the above facts, it is clear that the post of Cabin-Master has become diminishing category due to introduction of improved technology in train operation.

Opinion:

The study team opines that the present vacant position of Cabin-master should be rendered as surplus immediately and the remaining posts should be surrendered in phase wise. **Hence, 33 vacant posts of cabin-master should be made surplus immediately.**

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2.2.4 **Summary of requirement of Cabin-Man & Cabin-Master:**

NEED BASED REQUIREMENT OF CABIN-MAN & CABIN-MAST IN ASANSOL DIVISION							
Sl No.	Category	S/S	MOR	Vac.	**Proposed**		Remarks
					Sanctioned Strength (S/S)	**Surrender**	
1	Cabin-Man	185	170	15	171	14	Para ref. 2.1.6,2.1.7
2	Cabin-Master	137	104	33	104	33	Para ref. 2.2.3
TOTAL						**47**	

2.2.4.1 **RECOMMENDATION:**

Considering the facts and figures discussed earlier, the study team recommends that 14 posts of Cabin Man and 33 posts of cabin-master working under Sr. DOM/ASN should be made surplus and surrendered immediately. Thus, the proposed sanctioned strength of Cabin-Man and Cabin-Master under Operating Department in Asansol Division would be 171 (185-14) and 104 (137-33) respectively.

CHAPTER-III

3.0 FINANCIAL APPRAISAL:

3.1 According to summery of recommendation made in para-2.2.4.1, the financial savings achieved on account of surrendering 47 posts of Cabin man & Cabin-Master under Operating Deptt. in ASN division is calculated below. For easier calculation, bottom grade of Level-1 is considered.

LEVEL	G.P	PAY	MEAN PAY	D.A	NO OF POSTS	MONEY VALUE in Rs.	
				9%		MONTHLY	ANNUAL
1	1800	18000-56900	37450	3371	47	19,18,587	2,30,23,044

Thus, consequent upon implementation of recommendation, **the annual savings for surrendering of 47 posts of Cabin man & Cabin-Master would be Rs. 2.3 Crore.**