

Chapter 4 – Mechanical – Zonal Hqrs/Workshops/ Production units

The Mechanical Department is mainly responsible for management of –

- Train operations by ensuring motive power availability, crew management, rolling stock management and traffic restoration in case of accidents
- Workshops set up for repair, maintenance and manufacturing of rolling stock and related components
- Production Units engaged in production of locomotives, coaches, wheel sets etc.

The Mechanical Department is headed by Member Mechanical at Railway Board (RB) who is assisted by Additional Members/ Advisor for Mechanical Engineering, Production Units and Rolling Stock/ Stores.

At Zonal level, the Department is headed by a Chief Mechanical Engineer (CME) who reports to the General Manager of the concerned Railway. The office of the Member Mechanical of the RB guides the CME on technical matters and policy. At the divisional level, Senior Divisional Mechanical Engineers are responsible for implementation of the policies framed by RB and Zonal Railways. The Workshops are headed by Chief Works Managers who report to the CME of the concerned Zone. Production Units are managed independently by General Managers reporting to the RB.

The total expenditure of the Department during the year 2014-15 was ₹41,155.36 crore. During the year, apart from regular audit of vouchers and tenders, 640 offices of the Department were inspected.

This chapter includes one review on Manpower management in mechanical workshops in Indian Railways. Audit noticed that in the workshops of Indian Railways, there was no uniform or scientific criteria to assess the manpower requirement. Benchmarking for improvement was not being adopted in the workshops.

In addition, this chapter includes five individual paragraphs related to delay in commissioning of diesel locomotives; wasteful/ unproductive expenditure on procurement of EMU bogies/ high capacity bogies etc.



4.1 Manpower Management in Mechanical Workshops

4.1.1 Introduction

Indian Railways (IR) is a labour intensive industry having a workforce of over 13.26 lakh regular employees with an annual wage bill amounting to about ₹ 84,748 crore as on March 2015. Of these, nearly 1.55 lakh employees are engaged in 42 mechanical workshops of IR, maintaining the large fleet of rolling stock of IR comprising 2,54,006 wagons, 68,558 coaches and 10,730 locomotives (as on March 2015). These 42 mechanical workshops spread across the sixteen zonal railways across the country, carry out periodic overhauling of diesel and electric locos, coaches, wagons and Electrical Multiple Units (EMUs) besides manufacturing and repairing of various components required for maintenance of rolling stock in field units of IR.

Each workshop prepares its periodical overhaul (POH) programme two years in advance indicating the out-turn that they would be able to achieve, taking into account the number of coaches/wagons/locomotives that would fall due for POH. The proposals sent by Zonal Railways are examined by RB which then sets the annual targets. Optimal utilization of rolling stock is largely dependent on effective management of workforce in these workshops. The broad purpose of manpower management is to maximize the return on human capital investment and minimize manpower related financial, operational and regulatory risks. As such man-power management touches virtually every aspect of operations of IR as these workshops deal with the maintenance of the prime assets i.e. rolling stock which are at the core of their operations. Financial incentive schemes were introduced in workshops as a tool to increase productivity by boosting the morale of the staff, in which employees are assured of getting incentive based on the time saved on the job under Chittaranjan Locomotive Works (CLW) Scheme or outturn achieved under Group Incentive Scheme (GIS) scheme.

4.1.2 Organizational structure

At RB level, the workshops come under administrative control of Additional Member (Production Unit & Workshops).

At Zonal level the workshops function under the overall control of the General Manager assisted by Chief Mechanical Engineer and Chief Workshop Engineer. The Chief Workshop Manager is responsible for the day to day functioning of the Workshops.

The Chief Workshop Managers are assisted by various Dy. Chief Engineers (mechanical and electrical) on the technical side and Workshop Accounts Officer and Workshop Personnel Officer on administrative side. Workshop Personnel Officer, who while reporting to the CWM is under the administrative control of the Chief Personnel Officer at Zonal Level. Manpower management at workshops is the joint responsibility of the Production Engineer and the Personnel Department.



A Planning Branch, under the control of CPO, also functions in each Zonal Railway. The Planning Branch comprises the Efficiency Cell & Staff Inspection Units, (also called Work Study Cells). The Efficiency Cell conducts work studies and suggests steps for improving efficiency, effectiveness and economy. In Zonal Railways, Senior Deputy General Manager (SDGM) implements the policies relating to the manpower management. Zonal Railways annually send their annual work study programme to the RB. Apart from the work studies approved by the RB, General Managers/SDGMs of Zonal Railways also approve some work studies covering different areas/wings in the Zone.

4.1.3 Audit objectives

This review was conducted to check whether:

- Assessment of manpower requirement was related to the infrastructure facilities available;
- Available manpower was utilized efficiently and economically;
- The RB's instructions on rightsizing and recommendations of work study reports were implemented and training provided was adequate.
- Incentive schemes achieved the desired results of increased production with minimum manpower.



4.1.4 Audit criteria

The provisions contained in Chapter IV of Indian Railway Code for Mechanical Department (Workshops) and RB instructions relating to manpower management viz. recruitment, benchmarking, rightsizing, modernization, implementation of incentive schemes and training were adopted as criteria.

4.1.5 Audit scope, methodology and sample size

Both Mechanical and Electrical Departments of all workshops undertaking POH of rolling stock (wagons, coaches and locomotives) were covered in the study for a period of three years from 2012-13 to 2014-15.

Records at Zonal Railway Headquarters, workshops and Personnel Branch were examined and data pertaining to manpower utilization, targets set and achieved, incentive schemes in place and trainings was collected for analysis in arriving at conclusions.

4.1.6 Audit findings

4.1.6.1 Manpower assessment and its revision

Basis for assessment of manpower: Assessment of right requirement of manpower is the primary step in manpower management of any organization. The manpower required in the workshops is to be assessed by analyzing the activities, jobs, skills and time required for execution of jobs, availability of infrastructure etc.

As directed by RB ⁵⁸, the workshops are required to furnish their POH programme two years in advance indicating the out-turn that they would be able to achieve, taking into account the number of coaches/wagons/locomotives that would fall due for POH (i.e. arisings), capacity of POH with reference to availability of manpower and any enhancements in capacity due to augmentation works. The workshops are also required to indicate their capacity to undertake works of manufacture/rehabilitation of various items and to undertake Rolling Stock Program (RSP) works.

As per Para 111 of Mechanical code, efficiency of a workshop is largely dependent on the planning and production control organization of the workshop which is required to maintain data of installed capacity, booked load, spare capacity etc., The basic requirement, would thus be, to assess the installed capacity of the workshops with reference to the plant and machinery available. The details pertaining to the installed capacity of the workshop, targets fixed

⁵⁸No.2012/M(W)/814/1 dt 5-9-2011, 20-9-2012 and 14-10-2013

and basis of assessment of requirement of manpower of the mechanical workshops on IR are summarized below:

Table 4.1

Sl. No	Details	Number of workshops
1	2	3
1	Total number of mechanical workshops	42
2	Number of workshops where installed capacity was assessed	26
3	Number of workshops where installed capacity was not assessed till date	16
4	Number of workshops where requirement of manpower was re-assessed as per installed capacity prior to March 2015	20
5	Basis for assessment of target of the workshop	
a	Arisings and targets fixed by RB	34
b	Capacity of workshop	2
c	Availability of manpower as per RITES study	4
d	Data not furnished(ER-Jamalpur & NWR-Jodhpur)	2

Note: Annual workload of the workshop was categorized in the table based on whether it is assessed based on

(a) arisings of POH due rolling stock for that year

(b) capacity of the workshop or

(c) Scientific assessment based on infrastructure and availability of the manpower as per RITES study

Capacity of Workshops: From the table above, it can be observed that out of 42 mechanical workshops examined in audit, installed capacity was assessed in only 16 shops and subsequently re-assessed in 10 shops. Installed capacity was yet to be assessed in 16 workshops on IR.

Assessment of requirement of manpower: Audit also observed that no norms are laid down in case of mechanical workshops though norms of requirement of manpower based on workload is prescribed in case of maintenance of rolling stock in open line sheds. Requirement of manpower was stated to have been assessed based on installed capacity in 15 out of 42 workshops. In 20 out of 42 workshops, it was stated that the requirement of manpower was re-assessed subsequently. Thus in 22 out of 42 workshops, basis of assessment of manpower provided was not known and neither was any subsequent study



conducted to re-assess the requirement of manpower either based on installed capacity of the workshops or target required to be achieved based on needs of IR

Basis of fixation of outturn to be achieved: It was observed that there was no uniform or defined basis for fixation of targets. Targets were stated to have been fixed on assessed capacity of the workshops only in 2 workshops viz., Parel and Nagpur. In respect of 4 workshops⁵⁹ fixation of targets was based on studies conducted as part of introduction of Group Incentive Scheme which took into account both installed capacity and availability of manpower. In the remaining 36 workshops, fixation of targets was based on factors such as assessment by the shops themselves based on achievement of earlier year's targets, anticipated arisings and targets fixed by RB etc.

Thus, audit observed that in the absence of specific norms prescribed, there was no scientific or uniform method in place to assess the requirement of manpower in workshops based on installed capacity of the workshops and time required for the outturn as per installed capacity.

IR needs to put in place a scientific basis of assessing the capacity of manpower and ensure that manpower as required is provided to enable effective utilization of infrastructure created in the workshops.

Segregation of staff for core activity and maintenance activity - There are three different types of repair and maintenance units on Railways viz.,

- (1) Carriage and Wagon Workshops and
- (2) Running Sheds, Sick Lines and Train Examining Stations.
- (3) Locomotive Workshops

POH activity is carried out in Carriage and Wagon Workshops, activity relating to maintenance is carried out in running sheds/sickliness or train examination points. Activity of manufacture is generally outsourced unless a workshop is specifically set up for this purpose like spring shop at Sithouli, or manufacture of wagons as at Samastipur.

Para 107 of the mechanical code also lays down that the main locomotive workshops of the railway in addition to the repairs and reconditioning of rolling stock, plant and machinery, and the manufacture of the spare parts for the repair thereof, may also carry out work of manufacture and assembly of locomotives, coaching and goods vehicles, manufacture of articles required for use by stores department of the railway and other government departments, foreign railways and others.

⁵⁹ Mancheswar, Bhopal, Tirupati and Rayanapadu

However, it was observed that even in Para 107 of the Mechanical Code, no specific provision for subsidiary activities is made for Carriage and Wagon workshops. It was observed that while the workshops working under GIS scheme undertook only the core activity of POH of rolling stock, the workshops under CLW scheme (where payment of incentive was based on job work), in addition to the core activity of POH of rolling stock, took up many subsidiary activities and maintenance activities such as Intermediate Overhaul (IOH)/ Premature POH (NPOH), heavy repairs of wagons (C-Category) and other repair and miscellaneous manufacture activities.

Out of total man-hours of 1,202.29 lakh available during the year 2014-15, only 76 *per cent* was used (i.e. 910.42 lakh man hours) for undertaking main/core activity of the workshop and the remaining 24 *per cent* (i.e. 291.88 lakh man hours) was utilized on subsidiary activities in 28 out of 42 workshops. Of the remaining 14 workshops, no details of utilization of man-hours were furnished by the eight workshops⁶⁰ and no subsidiary activity was stated to be carried out in five workshops⁶¹.

Audit also observed that in 20⁶² out of 28 workshops where data was made available, man-hours ranging from 2 to 78 *per cent* were utilized on subsidiary activities, instead of being done in open line sheds or outsourced as per instructions of RB on outsourcing of non-core activity, leading to inefficient-utilization of available skilled manpower of workshops for POH activity.

IR needs to lay down specific and uniform guidelines across the workshops to ensure that only core activities are assigned to the workshops as per extant provisions of the Mechanical Code to ensure effective utilization of infrastructure created for the core activity.

Benchmarking - Benchmarks serve as standards for comparing current performance levels and provide useful feedback to executives to improve their performance. They firmly establish a process of review and analysis on a consistent basis with the objective of “getting more out of less”. As the organization improves, and as technology and external environment undergoes changes, these benchmarks must continuously be reviewed, inspected and, if required, mid-course corrections applied to reflect higher levels of expectations and achievements. RB issued instructions (March 2009) regarding benchmarking analysis of man power productivity ratios of various activity

⁶⁰ Charbagh, Tindharia, Jamalpur, Parel, Kurduwadi, Mancheswar, Liluah and Gwalior

⁶¹ Nagpur, Mahalakshmi, Rayanapadu, Kharagpur and Jhansi.

⁶² Matunga, New Bongaigon, Alambagh, Jagdhari, Kalka, Ajmer (loco), Bikaner, Raipur, Perambur (Carr), Kharagpur, Samastipur, Ajmer (carr), Jodhpur, Tirupati, Lallaguda, Perambur (Loco), Goldenrock, Hubli, Mysore, Bhavnagar



centres such as loco sheds, engineering offices etc., but mechanical workshops were excluded from these benchmarking norms.

Most of the workshops in IR carry out multifarious activities in addition to the main activity of POH such as refurbishment of coaches, intermediate over haul (IOH) of bogies, rehabilitation of coaches, rebuilding and heavy repair of wagons damaged in operation etc. In addition to this, the workshops also undertake rebuilding/production work under Rolling Stock Programme (RSP) as decided by RB. While a system of assessing productivity based on standard units of production was evolved in respect of four workshops in which GIS bonus payment was introduced, it was however observed in audit that no such system of assessment of quantum of work in terms of equated or standard units was evolved for the other 38 mechanical workshops.

In the absence of a measuring standard or benchmarking norms prescribed by Railways themselves for mechanical workshops, Audit attempted to compare Manpower Ratio (MPR) in respect of comparable mechanical workshops (i.e. the manpower engaged is divided by the quantity of output turned out) in workshops with comparable workloads where only POH of Coaches or POH of wagons was being carried out.

Audit observed that 11 workshops carried out activity of POH of Coaches as their major activity during the period of review and manpower ratio⁶³ in these workshops ranged from 1.08 at Tirupati to 1.92 at Hubli. Similarly, in five workshops where the activity was restricted to POH of Wagons, manpower ratio in these workshops ranged from 0.19 at Pratapnagar to 0.39 at Jhansi.

Audit also observed that while activities in these select workshops were focused and restricted to either POH of coaches or wagons and only 2 to 3 related activities were carried out, in the remaining workshops, the activities were mixed and no comparable standards were evolved. Audit also observed that in units where mixed activities of POH were taken up, there was no system of assessing standard or equated unit which would have enabled least Man Power Ratio (MPR) i.e. highest productivity with least staff among the workshops to be adopted as benchmark for comparison of the performance of other workshops.

In view of the varied nature of work handled, IR needs to evolve a standard measurement unit to assess and measure the quantum of workload that can be handled by the workshops based on available manpower and capacity to enable effective utilization of available resources.

⁶³ Manpower Ratio (MPR) in respect of comparable Mechanical workshops (i.e. the manpower engaged is divided by the quantity of output turned out)

Lack of uniformity in strength of non-production employees - Manpower employed in workshops are categorized in four main groups viz., Officers, Production, Ministerial and others. The main category of manpower in a workshop is that involved in Production and the other categories provide supervision, direction, control and support. A comparison of percentage of the category of ministerial and support staff to that of production staff across workshops of IR was made by audit.

It was observed that the percentage of “ministerial staff” to total production staff ranged from 2.73 *per cent* (Bhopal) to 11.23 *per cent* (Dahod) and that of “other staff” to total production staff from 0.72 (Kurduvadi Workshop/CR) to 10.06 *per cent* (Bikaner Workshop/NWR) of the production staff. Audit thus observed that there was no uniform assessment of manpower requirements of “ministerial” and “other staff”. Adopting an average of 6.7 and 2.8 *per cent* respectively in respect of “ministerial” and “other” staff, it is observed that there was excess operation of 1881 men per annum on an average on 24 workshops.

IR needs to make a realistic requirement of staff in respect of “ministerial” and “other” categories of staff based on best practices across workshops of IR and ensure that requirement of these categories is fixed accordingly to avoid operating excess men and also adopt principles of benchmarking.

Outsourcing and its impact on manpower - The RB issued broad policy guidelines (February 2005) for outsourcing various activities. As per these guidelines, Railways as a department would deal mostly with the core activities of a national transport organization in line with its responsibilities. Railways would implement non-core activities through outsourcing consistent with the agenda of planned rightsizing of the organization. The activities identified for outsourcing were also identified in these instructions. In compliance with above instructions, various activities such as coach/wagon cleaning, rehabilitation of wagons, fitting of electrical items etc. were outsourced in workshops and substantial expenditure is being incurred in outsourcing.

A review of records of workshops of IR revealed outsourcing was resorted to in 14 out of 16 Zones (no outsourcing was done in ECR and NFR). A total of 378 activities were outsourced at a value of ` 229.81 crore, against which an expenditure of ` 149.50 was incurred till 31 March 2015. 149 outsourced activities were core activities and remaining 229 were non-core activities.

Audit observed that outsourcing of core activity was contrary to extant instructions of the RB (February 2005). Railways stated that these activities were taken up through original equipment manufacturer (OEM) firms due to



non-availability of infrastructure facilities and expertise. In respect of outsourcing of non-core activities, it was observed that no manpower was proposed for reduction though guidelines issued required that outsourcing of non-core activities should be implemented with the agenda of planned rightsizing.

IR thus, needs to evolve a clear policy on outsourcing as regards core activity consistent with its guidelines.

Works of RSP carried out in Mechanical Workshops - Annual RSP⁶⁴ is a follow up of the Five Year Plans, formulated for the IR in respect of acquisition of rolling stock. This programme also considers major modifications to be carried out on rolling stock primarily involving change their class, i.e., conversion of coaches into Accident Relief Trains, conversion of electric Loco rectifiers etc., These works are programmed by RB based on proposals received from Zonal Railways.

Para 1524 of Mechanical code lays guidelines that works which are normally repair items and do not involve any modernization/ conversion of the stock and those which do not affect the category of the rolling stock or class should not be proposed under RSP and should normally be carried out by the Railway. The items of works which do not form part of RSP should be carried out by the Railway under a special revenue estimate. These include works such as re-cabbling of locos, wheels for locos, re-harnessing, rehabilitation, provision of minor equipment, re-winding of armatures not falling within the ambit of capital spares etc.

During the period of review, 193 RSP works as allotted by RB were undertaken in workshops of 12 out of 16 zonal railways (excluding ECR, NER, NFR and WCR) as detailed below:

Table 4.2

Railway	Number of activities under taken during the period 2012-15	Number of activities outsourced		
		Repair/ refurbishment/ renewal/ retro-fitment	Manufacture	Procurement
1	2	3	4	5
SCR	29	17	12	0
CR	31	12	6	13
ER	9	3	0	3
ECR	0	0	0	0
ECOR	12	7	0	3
NR	12	2	0	0

⁶⁴Para 1501 and 1512 of Indian Railway Mechanical Code.

NCR	3	3	0	0
NER	0	0	0	0
NFR	0	0	0	0
NWR	10	10	0	0
SR	26	8	2	5
SER	11	8	0	3
SECR	2	2	0	0
SWR	24	0	0	0
WR	24	22	0	0
WCR	0	0	0	0
Total	193	94	20	27

Contrary to the above provisions, audit observed that 94 (48 *per cent*) of 193 RSP works taken up during the period of review pertained to works of normal repair such as refurbishment of coaches, provision of mobile points, painting, repairs to wagons including drilling of holes etc., which did not fall in the category of RSP works and should have been done departmentally either in the open line maintenance sheds or workshops.

As per the RB's guidelines (January 2005), outsourcing was to be resorted to in non-core areas linked with planned rightsizing and in areas where staff attrition was higher than induction. Audit, however, observed that while 141 RSP works (73 *per cent*) were outsourced (Total of Col.3 to Col.5 of Table 4.2) on the plea of non-availability of sufficient manpower and lack of expertise in the shops, 52 such RSP works⁶⁵ (27 *per cent*) were taken up by the workshops themselves, even though availability of workers in these shops was also below the sanctioned strength of these workshops, indicating lack of clarity in following orders on outsourcing.

IR thus, needs to ensure implementation of guidelines as laid down and define clearly the nature of works which can be categorized as RSP. RB also needs to examine the need for such works being assigned for execution in workshops as there is shortfall in manpower in most of workshops when compared with sanctioned strength.

4.1.6.2 Manpower utilization

Utilization of man-hours - Two types of Incentive schemes viz., CLW and GIS are being operated in the Mechanical Workshops which are discussed in detail in para 4.1.6.6. Incentive scheme or payment by results affords direct financial incentive to workers who exceeded a minimum level of performance

⁶⁵ ER – 3 works, ECOR 2 works, NR – 10 works, SR-11 works, SWR - 24 works, WR - 2 works



while enabling the administration to improve productivity and efficient utilization of manpower, machinery and plant.

Where the CLW scheme of incentive payment is in operation, the time allowed is computed after conducting time-study in accordance with the standard practices of work measurement. The allowed times are so fixed that a workman of normal ability can earn 33-1/3 *per cent* bonus over and above his basic wages for the period spent on piecework jobs. Where no time is saved, no bonus is payable. As the scheme envisages that a worker of normal ability is able to earn bonus by saving time, it is essential that all available man hours are fully utilized by ensuring sufficient workload or by regulating the requirement of manpower to workload available through regular and timely review of the incentive managerial statements. RB advised (June 1999), reduction of 12 *per cent* in allowed time for each shop/activity (effective from 1 September 1999), and directed Zonal Railways to revive the monthly monitoring system both at workshop and headquarters level to analyze inter-alia, the trend of deviations, shortcomings percentage of bonus earnings, deployment of Direct Workers and Essential Indirect Workers vis-à-vis sanction and actual load lifted per direct worker. Board also directed that proper analysis of 'un-accounted hours' should be carried out regularly and follow up action should be taken to eliminate the arising of un-accounted hours.

Analysis of utilization of man-hours in the workshops where CLW incentive scheme was in vogue revealed that time saved due to operation of incentive scheme was not fully utilized indicating that Board's instructions on elimination of unaccounted man-hours were not followed. This resulted in operation of man-power in excess of requirement in all the workshops in IR. Manpower to extent of 22,403 men⁶⁶ were operated in excess leading to payment of wages of ` 783.30 crore as detailed below:

Table 4.3

Sl No	Zone	No of workshops under CLW incentive scheme	Excess men due to non-utilization of man-hours saved under incentive scheme	Loss on wages (Rs in Crore)	Variation in assessment of load lifted (Yes/No)	No of workshops with incentive payment in excess of 45 <i>per cent</i>
1	2	3	4	5	6	7
1	CR	2	2439	114.66	Y	1
2	ECR	1	85	2.15	Y	0
3	ER	3	4606	121.38	Y	2

⁶⁶ Excess men assessed as a difference of men on roll less manpower actually required based on time taken as per records of the workshop

4	NCR	1	919	36.70	Y	1
5	NER	2	1416	43.74	N	0
6	NFR	2	1266	56.39	Y	2
7	NR	5	2069	70.97	N	2
8	NWR	4	2124	80.90	N	2
9	SCR	1	252	6.49	Y	0
10	SECR	2	238	7.13	Y	0
11	SER	1	1480	51.22	N	0
12	SR	3	2394	75.05	Y	3
13	SWR	2	639	21.45	Y	2
14	WCR	1	545	18.15	Y	1
15	WR	4	1931	76.92	Y	3
Total		34	22403	783.30		19

Variation in assessment of Load Lifted and high earning of incentive - In terms of Para 431 (viii) of Indian Railway Mechanical Code, the number of effective hours available per shift per month will be taken as 200 and with the addition of 33 1/3 *per cent* representing the average efficiency under incentive scheme, 267 man hours per man per month shall be the basis for working out the number of direct workers. Thus, Load lifted per worker (i.e. the number of hours worked per man per month) is an important index for the administration to assess whether the time saved has been productively utilized. The higher figure of load lifted indicates better utilization of available manpower. Audit observed that load lifted per worker was assessed differently by different workshops across zonal railways⁶⁷ and also within electrical and mechanical wings in same shops as observed in SCR.

Para 402 of Indian Railway Mechanical Code provides a ceiling limit of profit of 50 *per cent* and Para 419 prescribes a review where large profits are made more or less consistently. Audit observed excessive profits indicated by payment of incentive above 45 *per cent* in 19 workshops⁶⁸ out of 34 workshops where CLW scheme of incentive scheme was operated on 11 Zones.

Payment of incentive at consistently higher rates indicate that there is a need for re-assessment of time allowed in view of changes due to provision of modern machinery and re-organization or improvements in working conditions which have led to requirement of lesser time for carrying out the same jobs.

⁶⁷(CR, ER, ECR, NER, NFR, NCR, NR, NWR, SECR, SR, SWR & WR)

⁶⁸Zonal Railways/Workshops where percentage of incentive is more than 45 *per cent*: 1. CR (Matunga) 2. ER (Kancharapara, Liluah) 3. NCR (Jhansi) 4. NFR(Dibrugarh, New Bongaigaon) 5. NR (Alambagh, Jaghdhari) 6.NWR (Ajmer (Carr), Jodhpur) 7. SER (Kharagpur) 8. SR (Goldenrock, Perambur (Carr), Perambur (loco) 9. SWR (Hubli, Mysore) 10. WCR (Kota) & 11. WR (Dahod, Mahalakshmi, Pratapnagar)

IR thus, needs to ensure effective implementation of incentive scheme by efficient utilization of all available man-hours eliminating un-accounted man-hours.

Comparison of allowed times - Effectiveness of incentive schemes of payment is directly linked to time saved in operations which can be utilized for increasing productivity. Under the CLW pattern of incentive scheme in vogue in most workshops on IR, the time allowed is fixed taking into account the time required for performing an activity by a worker of average capacity, to which are added the time expected to be saved, preparatory time required, allowances towards fatigue and contingencies. Indian Railway Mechanical code requires that the time taken on job works are to be reviewed periodically and rationalized based on improvements in infrastructure as also the expertise gained by workers in doing repetitive work over a period of time.

To enable examination of provisions of mechanical code that time allowed should be reviewed periodically and reduced or rationalized based on improvements in facilities and infrastructure provided, audit sought information for the years 2005-06, 2010-11 and 2014-15. Details of time allowed and time taken were not furnished to audit by 11 workshops⁶⁹ and furnished partially by four workshops⁷⁰.

Audit observed huge variation in time allowed and time taken for similar activities across different workshops. The difference in time allowed ranged from 836 hours to 1291 hours (154 *per cent*) for the activity IOH of Non-AC LHB Coach and from 105 hours to 2179 hours (2075 *per cent*) for IOH of Bogies. Similarly, the time actually taken varied from 5532 hours to 6896 hours (125 *per cent*) for Refurbishment of AC coach and from 89 hours to 2671 hours (3001 *per cent*) for IOH of Bogies.

It was further observed that within the same workshop while there was reduction of time allowed in respect of 12 activities, contrary to the instructions on reduction, the time allowed increased in respect of nine activities as detailed below:

Table 4.4

Sl No	Rly	Workshop	Activity	Allowed time during			Percentage of variation
				2005-06	2010-11	2014-15	
1	2	3	4	5	6	7	8
1	NFR	Dibrugarh	POH of Non AC	3618	3690	3256	-10

⁶⁹ Kurduwadi, Mancheswar, Gorakhpur, Izzatnagar, Tindharia, Jodhpur, Bikaner, Liluah, Kharagpur, Bhavnagar and Rayanapadu.

⁷⁰ Matunga, Amritsar, Ponmalai, Lalaguda

			Coach				
	NFR		POH of AC coach	4591	4337	3866	-16
2	NFR	New Bongaigaon	POH of DEMU Coach	1054	817	820	-22
	NFR		POH of Non AC Coach	4986	4837	4653	-7
	NFR		POH of AC coach	7013	6089	6391	-9
3	NR	Jagdhari	POH OF WAGON	598	643	638	7
	NR		POH of AC coach - LHB	2687	3076	4283	59
	NR		POH of Non-AC LHB coach	2718	2817	3743	38
	NR		POH of Non AC Coach	3087	3115	4170	35
	NR		POH of AC coach	3397	3539	4844	43
4	NR	Kalka	POH of AC coach	586	547	547	-7
5	SCR	Tirupati	POH of MEMU Coach	2083	2083	2401	15
	SCR		POH of Non AC Coach	2217	2217	2491	12
	SCR		POH of AC Coach	2420	2420	3517	45
6	SECR	Nagpur	POH of NG Coach	1620	1173	1294	-20
	SECR		POH of NG Wagon	2875	1051	730	-75
7	SWR	Mysore	POH of Non AC Coach	3444	2886	3431	0
	SWR		POH of AC coach	5162	4034	4116	-20
8	SWR	Hubli	POH of AC coach	3800	3610	3498	-8
	SWR		POH of Non AC Coach	3500	3325	3075	-12
9	WCR	Kota	POH OF WAGON	318	660	682	114

Audit observed huge variations in assessing the allowed time for similar activity across time periods in the same workshop and across workshops for the same activity, variation in time allowed ranged from *-75 per cent* to *114 per cent* within the same workshops and from *154* to *2075 per cent* across workshops indicating lack of uniformity in assessing time required for conducting the same activity.

IR needs to review the procedure adopted for fixing of allowed times and ensure that fixation of times are subject to technical audit by independent third parties as the payment of incentives are based on savings achieved on these times.

Operation of excess posts of “Essentially Indirect Workers” - As per the RB's directives (June 1999), the percentage of Essentially Indirect Workers (EIWs) should not be more than *15 per cent* of the Direct Workers (DWs) in order to utilize the manpower directly in core activities and to increase the productivity.



Analysis revealed that the operation of EIWs was above 15 per cent in 23 out of 42 workshops in IR and ranged from 15.45 per cent (Pratapnagar) to 54.39 per cent (Kalka). The excess operation of EIWs beyond 15 per cent resulted in utilization of 5396 men in excess of prescribed norms. No approval as required was obtained in any workshop. Only one workshop on CR (Matunga) stated that proposal for approval was pending. Reasons for excess operations on some shops (Liluah, Kancharapara, Jhansi, Izzatnagar and Dahod) was stated to be due to staff shortages and to achieve increased out turn.

Utilization of manpower consequent on revision of periodicity of POH of coaches - RB in decided (March 2009) to increase periodicity of POH of BG Coaches from 12 months to 18 months to ensure increased availability and better utilization of coaches. Consequent on this decision, the arising of coaches for POH decreased from earlier levels. It was decided by the Board that this surplus capacity in workshops would be utilized to conduct IOH of bogies by offloading it from Maintenance Depots.

Audit examined utilization of surplus man-hours on account of revision of schedule of POH in 18 workshops⁷¹ which dealt with POH of carriages. Audit observed that man-hours saved on account of reduction in POH of coaches due to revision of periodicity were fully utilized on IOH of Bogies in 11⁷² out of 18 workshops. However, the savings in man hours could not be fully utilized in seven workshops on five zonal railways.⁷³ The quantum of man hours underutilized in four workshops where reduction in manpower was less than one per cent during the period of review was assessed at 18.41 lakh man hours as detailed below.

Table 4.5

Railway	Workshop	Men on roll (Actuals)		Variation in men on rolls (increase/decrease)		Shortfall in POH of Coaches (Nos)	Average requirement of man-hours per coach	Quantum of manhours underutilized due to shortfall
		2012-13	2014-15	No. of staff	Percentage			
1	2	3	4	5	6	7	8	9
SWR	MYSORE	1557	1683	126	8.09	-6	2712	-16272
NR	ALAMBAGH	3558	3807	249	7.00	-227	2712	-615624
SCR	LALLAGUDA	2838	2990	152	5.36	-109	2712	-295608
SWR	HUBLI	2766	2747	-19	-0.69	-337	2712	-913944

⁷¹ SCR-Lallaguda, Tirupati, CR-Matunga, Kurwadi, ER-Kancharapara, Liluah, ECOR-Mancheswar, NR-Alambagh, Kalka, NER-Gorakhpur, NFR-Dibrugarh, NWR-Ajmer(Carriage), Jodhpur, SER-Kharagpur, SWR-Mysore, Hubli, WR-Lower Parel, Mahalaxmi

⁷² SCR-Tirupati, ER-Kancharapara, Liluah, ECOR-Mancheswar, NR-Kalka, NER-Gorakhpur, NFR-Dibrugarh, NWR-Ajmer(Carriage), Jodhpur, SER-Kharagpur, WR-Lower Parel

⁷³SWR- Hubli and Mysore, NR-Alambagh, CR-Matunga & Kurudwadi, WR- Mahalaxmi and SCR-Lallaguda

Total	-1841448
-------	----------

As the shortfall in arisings of coaches due to change in periodicity of POH (2008-09) would have been offset by increase in holding of coaches and resultant increase in workload of the workshops, IR needs to review continuation of IOH of bogies offloaded from Maintenance Depots to enable utilization of workers in workshops for core activity.

Loss of man hours for attending coaches/wagons/locos rejected by NCO - Neutral Control Office in Workshops/Yards are meant for independent examination of the wagons repaired/overhauled before actual handing over to open line for operations. Wagons repaired in workshop's examination points are subjected for a check by Neutral Train Examiner (NTXR). Wagons examined and certified as fit only can be inducted into service. Those found defective by NTXR are detained for further attention.

Coaches and Wagons rejected by NCO are required to be attended to again in the workshop, on which man hours are lost in addition to the loss of earning capacity of Coaches/Wagons. A review of the position in workshops during the period from 2012-2015 revealed that percentage of rejections on 29 out of 42 workshops ranged from 0.1 *per cent* (Raipur Workshop – SECR) to 50.3 *per cent* (Jamalpur workshop - ER). The percentage of rejection was more than 20 *per cent* on seven workshops.⁷⁴ There were no rejections in 13 workshops, of which in four workshops⁷⁵ no neutral examinations were stated to be conducted. No separate record indicating the details of coaches submitted for neutral examination after completion of POH activity was maintained in Lallaguda Workshop on SCR and it was stated that the examination was carried out simultaneously and repairs/rectifications where found necessary were being attended to immediately, which could not be verified in audit due to no records being furnished in support of the claim. For the workshops which recorded rejections, these were due to bad workmanship, defective material and other reasons not recorded. A total of 7,60,106 hours were spent on rectification of defects on seven zonal railways⁷⁶. Adequate documentation of rejections and time spent on re-work were not being maintained in most of the workshops, which was contrary to extant provision in the mechanical code.

IR needs to re-examine the defects in the system where no neutral control examination is done in nearly 30 *per cent* of the workshops which seriously impacts the safety, though instructions in this regard had been issued (October

⁷⁴ Jamalpur, Liluah, Mancheswar, Jhansi, Perambur (Carr), Perambur (loco) and Bhopal

⁷⁵ Kurduwadi-CR, Gwalior-NCR, Tindhara-NFR and Charbagh-NCO

⁷⁶ SCR-9.23 hours, NFR -13095 hours, CR-38592 hours, ECOR 24232 hours, NWR-2315 hours, SER 6323 hours and SR 675540 hours.



2012) by RB to CMEs to review and ensure deployment of staff in NCO organization at important locations. IR may also take corrective action to reduce the percent of rejection and the resultant additional work.

Idle time - As per Para 429 of Indian Railway Code for Mechanical Department, all possible steps should be taken for preventing idle time. The time taken up in delays and holdups, due to breakdown of service or plant or any other cause for which the direct worker cannot be held responsible should be booked to "idle time" and all time so booked should be carefully investigated, responsibility for the delay or breakdown located and such steps, as may be, considered desirable, taken to prevent such waste. Workshop Personnel Officer should ensure the maintenance of proper idle time cards, which should be sent to the Workshop Accounts Officer regularly.

A review of booking of idle time in the workshops of IR is detailed in the table below:

Table 4.6

Sl. No.	Zone	Number of workshops	Number of workshops where idle time is not booked	Percentage of idle time to total time in workshops where idle time is booked		Total idle time booked (hours)
				From	To	
1	2	3	4	5	6	7
1	CR	3	2 (Parel & Matunga)	0.67	-	12021
2	ECOR	1	1 (Mancheswar)	-	-	0
3	ECR	1	1 (Samastipur)	-	-	0
4	ER	3	0	0.002	0.008	4618
5	NCR	2	1 (Gwalior)	0.004	-	700
6	NER	2	2 (Gorakhpur, Izzatnagar)	-	-	0
7	NFR	3	2 (Dibrugarh, Tindharia)	0.4	-	37582
8	NR	5	4 (Alambagh, Amritsar, Jagadhri, Kalka)	0.25	-	8434
9	NWR	4	3(Ajmer (Carriage), Bikaner, Jodhpur)	0.08	-	2725
10	SCR	3	2 (Lallaguda, Tirupati)	1	-	109784
11	SECR	2	0	0.17	0.28	19130
12	SER	1	0	0.029	-	7917
13	SR	3	1 (Perambur (Loco))	0.022	0.049	10538
14	SWR	2	2 (Hubli, Mysore)	-	-	0
15	WCR	2	2 (Bhopal, Kota)	-	-	0
16	WR	5	4 (Dahod, Mahalaxmi, Pratapnagar, Bhavnagar)	0.38	-	44677
Total		42	27			258126

As seen from the table above, no record of idle time having been booked was available in 27 (64 *per cent*) out of 42 mechanical workshops. IR therefore needs to ensure the accurate records on utilization of time as laid down in Chapter IV of Mechanical Code are followed.

Gate Attendance System - In order to avoid manipulations in the attendance sheets and time sheets (which are the basic documents for payment of wages and bonus), RB directed (May 2005) that all Production Units and Workshops should switch over to electronic/computerized Gate Attendance System in a phased manner. Implementation of these orders was examined in Audit and findings are detailed below:

Audit observed that though orders were issued for introduction of complete computerized system of gate attendance in all workshops as far back as in May 2005, the systems were introduced and functional in only four⁷⁷ out of 42 workshops in IR and even in these shops, manual/mechanical recording was also continued leading to duplication. In seven workshops, though the system was introduced, it was not functional. Mechanical system of recording gate attendance through time clocks and punching cards was still in force in 29 workshops (70 *per cent*). In one workshop at Gwalior (Sithauli- NCR), even mechanical system of recording system was not introduced.

Audit also observed that in seven workshops (NCR-1, NER-2, NFR-1, NR-1 and SR-2) manual system of recording time is still in force due to non-functioning of the mechanical system.

In addition to the above, the following irregularities were also noticed:

- There was no reconciliation between Gate Attendance Cards and Job Cards (which are used to record the time taken by workmen under incentive scheme) in 14 workshops⁷⁸,
- Time taken recorded in Job Cards was in excess or less than Gate attendance hours, in all the workshops indicating absence of checks and balances in the system and manipulation of the system and that RB's directions issued in June 1999 of analyzing 'un-accounted hours' and action to be taken to eliminate un-accounted hours were not implemented.
- Computerized gate attendance system did not provide for identification of labour, leading to chances of swiping of multiple cards by one person as observed in Rayanapadu workshop on SCR.

⁷⁷ Mancheswar (ECOR), Dibrugarh and Tindharia (NFR) and Rayanapadu (SCR)

⁷⁸ Ajmer (Carr), Ajmer (Loco), Amritsar, Charbagh, Dahod, Goldenrock, Gorakhpur, Jagdhari, Kalka, Lalaguda, Liluah, Mahalaxmi, Perambur (Carr) and Raipur – (Ann VIII Col 7 and 10)



- Computerized gate attendance system where introduced was restricted to only Artisans and Junior Engineers (JEs).

The present system of gate attendance involves manual intervention at various stages and irregular booking of time cannot be ruled out. IR therefore needs to ensure that its instructions of introduction of electronic/computerized gate attendance system issued in 2005 are implemented early.

4.1.6.3 Training

The workmen should be trained properly in initial, refresher and re-orientation training courses so that they are well equipped to cope up with the modern technological initiatives. RB impressed upon the Zonal Railways to chalk out an action plan so that systems are put in place, both for monitoring quality of training through active involvement of the Training Managers and also for undertaking regular evaluation of the level of knowledge and skills of different categories of workers.

Audit observed that training courses were conducted in 33 out of 42 workshops and no trainings were conducted in nine workshops⁷⁹ due to no separate Basic Training Centre (BTC) being attached to these shops.

During the period of review 1,767 induction courses and 1,266 refresher courses were conducted. It was observed that out of 62,297 slots programmed during the period 52,777 slots were utilized leaving gap of 9,520 slots (15 per cent), mostly due to shortage of staff and to achieve the work targets fixed. The following was also observed:

- Annual Training plan is drafted according to need assessed for both induction courses and for refresher courses.
- Training calendar is prepared in advance keeping in view the requirements of the workshops.
- Training material is furnished to trainees in all the Workshops.
- Feedback forms from trainees assessing the sufficiency of training was not obtained in seven⁸⁰ out of 42 workshops
- Similarly in 18 workshops, no system of obtaining feedback from supervisor or trainers regarding trainee perceptions was being followed.

⁷⁹ Sithauli (NCR), Raipur and Nagpur (SECR), Kurduvadi (CR), Samastipur (ECR), Tindhara (NFR), Mahalaxmi and Bhavnagar (WR), Kalka (NR)

⁸⁰ Mancheswar, Alambagh, Ajmer (Loco), Bikaner, Jodhpur, Kharagpur and Dahod.

Training Feedback - Audit obtained feedback through a questionnaire from 1209 staff undergoing induction training at these BTCs and also from the workers from shop floor (who were trained earlier) to assess their views on the training programmes conducted and the analysis of the feedback received is given below:

- 77 per cent opined that duration of the training was sufficient, 81 per cent felt that course material was sufficient, 75 per cent felt that training was useful in day to day working and 93 per cent opined that the content of training was organized and easy to follow.
- 84 per cent felt that the topics covered were relevant.
- 83 per cent of the trainees/workers felt that instructors were found knowledgeable.
- 24 per cent of the workers/trainees felt that the infrastructure for practical training was inadequate.
- 29 per cent of the trainees/staff stated that the training was not provided on new machinery introduced

IR needs to ensure that shortfalls in utilization of training slots are avoided and provide required Training Centers in the workshops where no trainings were conducted for lack of the same. Deficiency in assessing sufficiency of training through system of feedback needs attention.

4.1.6.4 Rightsizing

RB as part of the rightsizing plan envisaged in Vision 2020 document of 2009 reiterates annually instructions for one per cent reduction in overall sanctioned strength of the Zonal Railways and the same is being monitored at CRB's level. As part of rightsizing exercise, targets are being fixed by Zonal Railway Headquarters for reduction of staff by one per cent in various activity centres including workshops. RB also issued (March 2007) instructions that posts in safety categories should be considered for surrender after conducting a critical review.

A review of the status of achievement of targets in respect of rightsizing in the 42 workshops, revealed that target of one per cent reduction in sanctioned strength is being fixed every year only in 30 out of 42 workshops. No target for reduction was fixed in 12 workshops⁸¹. As against a target of 3408 posts, surrender of only 2012 posts was achieved, leaving a shortfall of 1880 posts (55

⁸¹Mancheswar (ECOR), Samastipur (ECR), Tindharia (NFR), Jagdhari and Kalka (NR), Raipur and Nagpur (SECR), Dahod, Lower Parel, Mahalaxmi, Pratapnagar & Bhavnagar (WR)



per cent) in 27 workshops. The ten workshops⁸² attributed the shortfall to shortage of manpower and increase in workload.

IR needs to ensure that the posts identified for surrender as part of their own plan of rightsizing are surrendered in a time bound manner.

4.1.6.5 Work study reports – surrender of surplus posts

Efficiency cell of Personnel Branch conducts work studies on all activities of IR other than core activities and suggests surrender of posts, if found surplus. As soon as the work study team completes the study, a report is to be sent to concerned workshop with the approval of CPO. A quarterly progress report on implementation of accepted recommendations is also to be sent to RB.

Audit observed that only 33 work studies were conducted in 16 workshops during the period of review, wherein 2491 posts were identified as surplus. Of these 1631 posts were agreed to be surrendered in 13 workshops. Two workshops i.e. Samastipur on ECR (two posts) and Jhansi (13 posts) on NCR did not agree for the surrender of 15 posts identified for which no specific reasons were furnished. Of the 1,599 posts agreed for surrender, 1,564 posts were surrendered with delays ranging from one month to 21 months till March 2015, leaving a balance of 30 posts in Ajmer (Carr) workshop and 35 posts of technicians for surrender in Perambur (carriage) Workshop on SR as detailed below:

ZONE	Name of the workshop	Number of work studies conducted	No. of posts identified as surplus	No. of posts agreed for surrender	No. of posts yet to be surrendered	Time taken for surrender of posts (months)
CR	Matunga	1	0	0	0	
ER	Jamalpur	8	138	114	0	
ER	Liluah	4	313	313	0	
ER	Kanchrapara	3	162	162	0	
ECR	Samastipur	1	2	0	2	
NR	Alambagh	1	178	178	0	
NR	Kalka	1	38	13	0	1 Month
NCR	Jhansi	1	13	0	0	
NFR	Dibrugarh	2	87	87	0	
NFR	New bongaigaon	1	40	40	0	
NWR	Ajmer (carr)	1	202	41	30	6 months
SR	Perambur (carr)	3	296	115	35	2 to 16 months

⁸² Matunga (CR), Ajmer (Carr), Jodhpur, Ajmer (Loco) (NWR), Lalaguda and Tirupati (SCR), Mysore and Hubli (SWR) and Kota, Bhopal (WCR).

SR	Perambur (loco)	1	288	164	0	8 to 21 months
SR	Golden rock	2	145	106	0	2 to 21 months
SER	Kharagpur	1	497	230	0	8 months
SWR	Hubli	2	92	68	0	2 months
Total		33	2491	1631	65	

Audit also observed that no work study was taken up by Efficiency Cell on sanctioned strength of work force of mechanical and electrical wings in all workshops in during the review period. No work studies were conducted in the remaining 26 workshops⁸³.

IR needs to strengthen systems to ensure that work-study is undertaken regularly in all workshops and surplus posts identified are surrendered immediately.

4.1.6.6 Incentive Schemes

Incentive scheme or payment by results was introduced in IR Workshops to afford direct financial incentive to workers who exceeded a minimum level of performance and also enable the administration to improve productivity and efficient utilization of manpower, machinery and plant. Two incentive schemes in vogue in IR are:

1. The CLW Incentive Scheme based on saving of time by the individual employee started in 1954 in Production Units and introduced in Workshops in 1958. Under this scheme, basic wages are guaranteed to all the workers. Time being the yardstick for measuring work, various operations in the workshop is subjected to time study in accordance with the standard practices of work measurement. The allowed times are so fixed that a workman of normal ability can earn 33-1/3 *per cent* bonus over and above his basic wages for the period spent on piecework jobs. This scheme is prevalent in 34 out of 42 mechanical workshops in IR. No incentive scheme is operated in workshops at Kurudwadi, Gwalior, Tindharia, and Bhavnagar.
2. The other one is based on saving of time by a group of employees known as the Group Incentive Scheme (GIS) and was introduced in Carriage Repair workshop/Tirupathi and Wagon Repair Workshop/ Guntupalli during January 2002/July 2002, Carriage Repair Shop Mancheswar (2003) and

⁸³ CR - Parel & Kurduwadi, ECOR- Mancheswar, NCR- Sithauli, NER- Gorakhpur, Izzatnagar, NFR- Tindharia

NR -, Charbhag, Amritsar, Jagdharni, NWR- Ajmer (Loco), Bikaner, Jodhpur , SCR – Lalaguda, Tirupati, Rayanapadu, SECR – Raipur, Nagpur, SWR- Mysore, WCR -Bhopal, Kota, WR – Dahod, Lower Pare, Mahalaxmi, Bhavnagar, Pratap Nagar.



Coach Rehabilitation Workshop Bhopal (2004). The incentive earned under this scheme is dependent on collective performance of the group as a whole and is directly linked to the productivity of the Group as well as the workshop.

Comparison of CLW Incentive Scheme and GIS - RB in their letter No.2007/M(W)/814/35 of 11 December 2008 intimated that all the Railways should switch over to the Group Incentive Scheme. However, GIS was introduced in place of CLW Incentive Scheme in only four workshops⁸⁴ of IR.

A comparative study of the CLW Incentive Scheme and Group Incentive Scheme in workshops with comparable output was made in audit in respect of 11 workshops carrying out repair of coaches and five workshops carrying out repair of wagons. Of these, two coaching workshops and one wagon workshop had implemented “Group Incentive Scheme” and in the remaining shops, the CLW Incentive Scheme was in operation, findings of which is summarized below:

Table 4.8

Sl No	Railway	Workshop	Type of Incentive scheme	Activity Type	Manpower Productivity Ratio (MPR) per unit	Average MPR (average of GIS for coaches)	Excess men utilised	Excess labour cost (Rs)
1	2	3	4	5	6	7	8	9
1	WR	PRATAPNAGAR	CLW	Wagon	0.19	0.27	0	0
2	SECR	RAIPUR	CLW	Wagon	0.22	0.27		
3	WCR	KOTA	CLW	Wagon	0.24	0.27		
4	SCR	GUNTUPALLI	GIS	Wagon	0.3	0.27	141	37623735
5	NCR	JHANSI	CLW	Wagon	0.39	0.27	867	390580899
		Total					1008	428204634
6	SCR	TIRUPATI	GIS	Carriage	1.08	1.13	0	0
7	SCR	LALLAGUDA	CLW	Carriage	1.13	1.13	7	1867845
8	ECoR	MANCHESWAR	GIS	Carriage	1.19	1.13	84	37597896
9	SWR	MYSORE	CLW	Carriage	1.27	1.13	116	45332336
10	NWR	JODHPUR	CLW	Carriage	1.27	1.13	140	52691940
11	NFR	DIBRUGARH	CLW	Carriage	1.44	1.13	213	115322034
12	NWR	AJMER (CARR)	CLW	Carriage	1.38	1.13	379	142644609
13	NER	GORAKHPUR	CLW	Carriage	1.5	1.13	690	233039220
14	NR	ALAMBAGH	CLW	Carriage	1.68	1.13	816	312927024
15	CR	MATUNGA	CLW	Carriage	1.77	1.13	1366	707865298
16	SWR	HUBLI	CLW	Carriage	1.92	1.13	836	326705456
		Total					4647	1975993658
		Grand Total					5655	2404198292

⁸⁴CRS/Tirupati, CRS/Bhopal, CRS/Mancheswar and WRS/Guntupalli.

Audit observed that in respect of 11 workshops where main activity was POH of BG coaches, the MPR ranged from 1.08 to 1.92 men per unit, with the MPR of the two coaching workshops working under Group Incentive Scheme averaging 1.13, which was well below the MPR of the workshops working under CLW Incentive Scheme.

Though the cost of incentive per unit and per worker is higher in GIS pattern, the MPR of the workshop is less when compared to that of CLW Incentive Scheme reflecting higher labour cost with less productivity for CLW Incentive Scheme. Thus, even though there is financial outgo on incentive, there is no comparable increase of productivity for CLW Incentive Scheme and savings on incentive payment was offset by excess men employed to achieve the required output.

Audit observed that in respect of workshops under CLW Incentive Scheme of incentive, there was excess utilization of men to extent of 4647 men (assessed as a difference of average MPR under GIS to actual MPR under CLW) resulting in avoidable payment of ` 197.59 crore towards wages annually (adopting labour cost per worker as per ASS).

In respect of workshops carrying out the activity of wagon repairs, it was observed that the MPR ranged from 0.19 to 0.39 men per unit averaging to 0.27 men per unit. The MPR of the workshop with GIS was higher at 0.30 compared to the average of 0.27 men per unit, which was in contrast to what was observed in Coaching Workshops, indicating utilization of more man-power in the workshop under GIS, besides higher outflow on account of incentive payment made. There was excess utilization of 1008 men in two workshops on account of higher than average MPR resulting in avoidable payment of wages of ` 42.82 crore annually.

Audit also observed that despite lapse of over six years, 38 workshops had not switched over to GIS despite it being a better scheme in which payment of incentive is linked to achievement of identifiable outputs such as increased productivity, reduction in holding time of coaches/wagons in workshops besides accounting for quality of work by including element of penalty for defective work noticed subsequently.

IR thus, needs to examine the reasons for the disparity of MPR in wagon workshops under GIS being higher than under CLW and make corrections in the scheme, where necessary, before introduction of GIS in all such workshops.



4.1.6.7 Overtime

In respect of workshops in which incentive bonus scheme of CLW Incentive Scheme is in existence, no worker covered under this scheme shall be paid overtime in ordinary conditions. Under the group incentive scheme, there is no provision for payment of overtime allowance.

Audit however observed that in five workshops⁸⁵ in three zonal railways, details of which are given in table 4.12, overtime of ` 14.12 crore was paid along with incentive bonus to 5462 workers as detailed below:

Zone	Workshop	Incentive paid (Rs)	OT paid (Rs)	No. of staff who were paid OT along with incentive
1	2	3	4	5
ER	LILUAH	3714546	10264430	1858
NR	CHARBAGH	40239509	1282975	598
NR	ALAMBAGH	300953838	9868117	2568
SR	PERAMBUR (CARR)	455417802	13880948	419
SR	PERAMBUR (LOCO)	98474178	105915838	19
Total			141212308	5462

Payment of overtime allowance along with incentive was in contravention to codal provisions. IR needs to ensure adherence of its policy of payment of overtime allowance to incentive shops

4.1.7 Conclusion

There was no uniform or scientific method in place to assess the requirement of manpower in workshops either by relating it to the installed capacity of the workshops or time required for the outturn as per installed capacity. Benchmarking, a tool for improvement, was not being adopted for workshops as it was done in other activity centres of IR.

Outsourcing was not consistent with the rightsizing policy of IR.

The man-hours saved by payment of incentive and the surplus man-hours on account of enhancement of periodicity of POH were not utilized fully, which resulted in idling of man-power. Irregularities in booking of man-hours was

⁸⁵ SR – Perambur (Carriage) and Perambur (Loco), NR- Alambagh and Charbagh, ER – Liluah.

evident from the fact that time actually utilized was more than available man-hours as per gate attendance records indicating manual intervention in the gate attendance system.

Majority of workshops did not book idle time which indicated irregular and improper maintenance of records. RB's instructions on switching over to the Group Incentive Scheme on all workshops was not implemented which could have ensured better productivity by linking payment of incentive to targeted outputs of rolling stock.

4.1.8 Recommendations

- Uniform norms should be followed in all workshops to assess the requirement of manpower.
- Only core activities must be assigned to the workshops as per extant provisions of the Indian Railway code for the Mechanical Department.
- Measurable benchmarking norms for effective manpower planning and improving the productivity of workshops may be prescribed and followed scrupulously.

4.2 North Eastern: Loss of Engine earning capacity due to non-Railway (NER) commissioning of New Diesel Locomotives

Delay in commissioning of Diesel Locomotives resulted in loss of earning of `28.80 crore

RB allotted four new WDG4/G4D locos in April 2014 from Diesel Locomotive works (DLW) Varanasi to North Eastern Railway, Izzatnagar with instructions for advice of dates of dispatch of locos from DLW and dates of receipts as well as their commissioning. The total cost of those locos was ` 58.80 crore at the rate of ` 14.70 crore per loco.

Ministry of Railways (RB) in their earlier reply to Chapter 4 of Comptroller and Auditor General of India (Railways) report No. 9 of 2001 had accepted the revised commissioning period of 4 to 8 days for pre-commissioning checks, to be carried out by respective Railway on the new diesel locomotive received from DLW.

During the review of records of operating department of Izzatnagar Division; it was noticed that above four new diesel locomotives were received in this division during the period from April 2014 to July 2014. The new locos were not commissioned within the period of 4 to 8 days prescribed for pre commissioning checks. These Diesel Locomotives were commissioned late with delays ranging from 258 days to 345 days. The Railway Administration consequently has suffered a loss of locomotive earning capacity to the tune of ` 28.80 crore (29664 engine hours) @ ` 9710/- per hour and blockage of capital of ` 58.80 crore on these locomotives due to their late commissioning.

The matter was raised (July 2015) with NER Administration. In reply the stated (October 2015) that the BG locos which are based at Izzatnagar shed have to haul trains on the adjoining territories of NR, ECR, NCR and NWR. Commissioner of Railway Safety (CRS) sanction for NR and other adjoining Railways were not available at that point of time. The days prescribed for commissioning were adhered to once it was clear that locos could now be utilized by traffic on receipt of CRS sanctions for all adjoining Railways.

The reply is not tenable because it is silent about the reasons for delay in obtaining CRS sanction. The CRS sanction has to be ensured prior to commissioning of the locos.

The matter was brought to the notice of Railway Board in January 2016; their reply has not been received (May 2016).

4.3 Western Railway (WR): *Improper planning and poor co-ordination led to wasteful expenditure on procurement of EMU Bogies*

Absence of coordination between the WR Administration and RB resulted in wasteful expenditure to the tune of ` 12.58 crore

Under the Action Plan to switch over from DC to AC traction, RB in June 2008 directed WR to convert their existing 21 DC rakes of nine cars to AC driven rakes by retrofitting them with SIEMENS electrics. Accordingly, RB instructed (05 August 2008) SR and SWR to manufacture 80 Type I bogies and 50 Higher Carrying Capacity (HCC) bogies respectively for WR with air suspension arrangement in Electrical Multiple Unit (EMU) Motor coaches and trailer coaches.

RB however, in February 2010, reversed its earlier decision of June 2008 and decided to retrofit the bogies with BHEL electrics, since SIEMENS electrics expressed its inability to undertake the work. WR Administration received 194 bogies against the ordered quantity of 130 bogies placed by RB till March 2012. The order for supply of EMU bogies to be retrofitted with SIEMENS electrics was neither cancelled by RB nor was such advice to cancel the order sent to RB by the WR Administration. Due to non cancellation of manufacturing order, 194 bogies costing `12.58 crore were received and are lying unused in Mahalaxmi Workshop (March 2012).

When the matter was taken up with the RB in January in 2016 they stated February (2016) that 30 bogies received by Mahalaxmi Workshop from trade have been utilized. 164 bogies were received from SR and SWR against RB's order for retro fitment works. Out of 164 bogies, 28 bogies have already been utilized and 86 bogies are proposed to be used with air suspension system in retrofitted EMU coaches. Further, balance 50 bogies have been offered to ICF for utilizing them in manufacturing of new EMU coaches. Other Zonal Railways have also been approached for collecting these bogies for their use in EMU rakes, if required. The reply submitted is not acceptable. Even though partial utilization of the idling bogies (58 out of 194) has been done, the fact remains that the whole exercise of retrofitment has only resulted in idling of bogies and consequent blocking of capital indicating improper planning and



poor coordination. The prospect of their proper use in the near future appears to be remote considering the fact that for the last 5-6 years, the MoR has not been able to find a proper solution to the problem of idling bogies.

Thus, the failure of RB to cancel the manufacturing order for supply of EMU bogies resulted in wasteful expenditure amounting to `12.58 crore for which responsibility is required to be fixed.

4.4 Southern Railway (SR): Unproductive investment in manufacture of High Capacity bogies

Improper assessment of demand for High Carrying Capacity type bogies led to unproductive investment of `10.50 crore as the amount invested remained blocked up for a period ranging from 15 months to 58 months

Based on the approved Rolling Stock Programme of 2008-09, 2009-10 and 2010-11, RB placed order (May 2008, August 2009 and June 2010 respectively) on Loco Workshop/ Perambur (LW/PER) to manufacture 254 High Carrying Capacity (HCC) bogies (74 for 2008-09, 100 for 2009-10 and 80 for 2010-11). These HCC bogies were to be retrofitted in Electric Multiple Unit (EMU). HCC bogies are suitable for the existing HCC Trailer Coaches and not for retro fitment in conventional trailer coaches due to difference in

- Type of centre pivot;
- Axle guide distance;
- Weight carrying capacity.

Records of LW/PER revealed the following:

- Out of the total ordered quantity of 174 bogies for 2008-09 and 2009-10, the workshop manufactured (December 2011 to July 2014) 132 HCC bogies. Out of these 174, 94 bogies were meant for fitting in EMU coaches homed at Tambaram and Avadi EMU sheds of SR.
- Out of the 132 manufactured bogies, 45 bogies were supplied to Avadi and Tambaram EMU sheds of SR, whereas 57 bogies were dispatched to other three Railways (Kanchrapara depot of ER-36, Matunga depot of CR-18 and Moulali depot of SCR-3).
- Out of the remaining 30 bogies, two bogies were converted for retrofitting in Motor coaches and dispatched to Avadi shed of SR. Another six bogies were sent to Moulali shed of SCR and 22 bogies were lying idle in

LW/PER (October 2015) as there was no requirement for these coaches in Tambaram and Avadi EMU sheds of SR.

- Out of the 36 bogies supplied to ER, only nine bogie frames have been utilised by replacing defective bogie frames and balance 27 remain unutilized in carriage complex.
- Out of the 18 bogies supplied to CR, six bogies were utilized and the remaining 12 bogies were lying idle. All the three bogies supplied to SCR were utilized.

Audit noticed (May 2014) that 45 bogies received by Tambaram and Avadi EMU sheds of SR could not be retro fitted in EMU coaches as the requirement of these sheds was bogies for conventional type trailer coaches and not for HCC type EMU coaches.

Audit also noticed that no demand was made by CR and ER for supply of HCC bogies. Records of SR Administration (Chief Workshop Engineer/ SR) further revealed (July 2014) that LW/PER did not have details of Railways who forwarded the demand to RB and Electrical department of SR were also not aware of demand raised by them for HCC bogies.

From above, it is evident that RB placed order on LW/PER for manufacturing HCC type bogies without proper assessment of requirement and demand. As such, the 106 HCC bogies manufactured by LW/PER at a total cost of `7.27 crore remained idle with SR Administration for a period ranging from 16 months to 58 months without yielding benefits to Railways (October 2015).

Audit further noticed (July 2014) that as against the Rolling Stock Programme 2010-11 for manufacturing of 80 HCC bogies, LW/PER did not commence manufacture of these bogies as there was no demand for HCC bogies. However, it was stated that material worth `3.23 crore for 122 bogies (80 for 2010-11 and 42 for 2009-10) procured between January 2011 and August 2014 were lying idle in the shop floor for a period ranging 15 months to 58 months (up to October 2015). It was also noticed that though the matter was taken up with RB in July and August 2014 for seeking further advice, no direction has been received from RB.

On the matter being referred to SR Administration in December 2014, they confirmed (March 2015) that the bogies were still lying idle and they are waiting for RB's further directives in this regard. They further added that all the manufactured HCC bogies will be supplied to ICF/Perambur. It was also stated



that part of materials would be utilised for manufacture of EMU TC bogies for which orders have been received from Chennai Workshops.

The reply of SR Administration itself proved that manufactured HCC bogies and materials are still lying idle. Further SR Administration do not have a concrete plan for utilization of the HCC bogies worth `7.27 crore and materials worth `3.23 crore lying idle.

Thus, improper assessment of demand for bogies of HCC type bogies led to unproductive investment of `10.50 crore (`7.27 crore + `3.23 crore) and the amount invested remained blocked up for period ranging from 15 months to 58 months (October 2015).

The matter was brought to the notice of Railway Board in January 2016; their reply has not been received (May 2016).

4.5 East Central: Infructuous expenditure on establishment of Railway (ECR) Electric Loco Factory

Proposed Green Field Electric Loco Factory (GELF), a Special Railway Project, failed to take off in view of mis-management of land acquisition resulting in idle establishment expenditure (`10.45 crore)

Ministry of Railways (RB) made (February 2007) a budget proposal at a cost of `1293.57 crore through Annual Works Programme 2007-08 to set up a Green Field Electric Loco Factory (GELF). RB desired (May 2007) that the GELF should be set up in a time frame of two years and envisaged creation of crack team for setting up the factory and to complete the land acquisition by October 2007. RB, *vide* a Gazette notification (February 2008), declared the project as a 'Special Railway Project'.

Audit reviewed the records pertaining to land acquisition for setting up of factory and noticed that under Section 20E of the Railway Amendment Act, 2008 in connection with 'Land acquisition for a Special Railway Project', Gazette notifications were published for acquisition of 1116.66 acres of land between October 2008 and April 2011. However, acquisition of land is incomplete even after lapse of more than seven years of sanctioning of the project.

Audit further noticed that out of total land of 1116.66 acres, upto 2014-15, Railway paid compensation of `7.23 crore (80 *per cent* of land cost) to land

losers for only 157.49 acres. Balance amount (20 per cent) for payment to land losers is under vetting of Finance Wing (August 2015). Out of this, formalities for obtaining possession of 141.32 acres land were still in progress. Due to slow progress of acquisition of land, Railway was unable to start even basic activities like erection of boundary walls, leveling of land and shifting of State Electricity Board transmission tower.

Audit analyzed the reasons for poor progress of land acquisition work and following were observed:

- As per clause 7(a) of Railway Amendment Act, 2008, any person authorized by the Central Govt. by notification may function as Competent Authority (CA) for the purpose of acquisition of land. ECR Administration nominated (February 2008) Dy. Chief Engineer/ Construction to perform the functions of CA for execution, maintenance, management and operation of said project. Though notification for acquisition of 967.5 acres of land was made in October 2008, till September 2011 ECR could pay compensation for acquisition of 143.18 acres of land.
- The General Manager/ ECR admitted (September 2011) that the progress of land acquisition and payment of compensation to land owner was slow because the Railway official (nominated as competent authority) was not conversant with the procedure of land acquisition and requested DM/ Madhepura to nominate suitable office as competent authority for land acquisition. Thereafter, DLAO/ Madhepura was nominated (October 2011) to perform the function of CA for land acquisition.
- Records further revealed that DLAO/ Madhepura started verification of plot-wise compensation payment details paid to different land owners by the previous competent authority (Dy. Chief Engineer of ECR) and till date (June 2015) only ₹0.71 crore compensation were paid to land owners of 16.15 acres.
- While performing the function as CA, Dy. CE/ Construction, ECR Administration (FA&CAO) deposited (November 2008) an amount of ₹43.87 crore to Competent Authority's (Dy. Chief Engineer) bank for payment to the land owners. However, RB rectified (April 2009) the mistake as opening of current account in the name of competent authority was not in consonance with extant Govt. rules and instructed ECR to deposit the unspent amount in favour of FA&CAO/ECR. Accordingly, ₹41.08 crore (unspent amount) was credited to such account head in



December 2009. It was also noticed that, objection was also raised (August 2009) by Vigilance (RB) and investigation was made to ascertain the background and purpose regarding opening and operation of current account in favour of the Competent Authority.

From the above, it may be concluded that the decision of ECR Administration to appoint Dy. CE as competent authority, who could not discharge his functions, and depositing of amount in Dy. CE's account further complicated the matter of land acquisition and led to delayed implementation of project.

Meanwhile, ECR Administration had incurred `10.45 crore (up to March 2015) towards establishment and other than expenditure on GELF. This expenditure incurred is totally infructuous in view of the fact that after expiry of seven years, the project is yet to take off and the ECR Administration is yet to possess a single acre of land thereby badly delaying the project.

Thus, glitches in the process of land acquisition as detailed above led to a Special Railway Project failing to take off even after seven years though the time frame visualized was two years. Expenditure of `10.45 crore incurred on GELF has proved infructuous.

The matter was brought to the notice of Railway Board in January 2016; their reply has not been received (May 2016).

4.6 Integral Coach: Non-recovery of excise duty from the purchasers Factory (ICF) of scrap

Incorrect interpretation and application of Central Excise Notification by ICF for levy of excise duty on sale of scrap generated from manufacture of coaches led to additional burden of `5.45 crore to ICF which had to be paid to Excise department from its own fund

Integral Coach Factory (ICF) during the process of manufacturing coaches generates aluminum wastes, iron and steel scrap due to cutting, forging and grinding.

As per Central Excise (CE) Notification (No.62/1995) dated 16 March 1995, wastes and scrap arising from manufacture of 'exempted goods' in a factory belonging to Indian Railways are exempted from payment of excise duty.

Coaches manufactured by ICF are falling under Central Excise Tariff Head (CETH)-8601 to 8606 and CE Notification (No.1/2011) of 1st March 2011 which exempted the excisable goods falling under CETH-8601 to 8606, as is in excess of the amount calculated at the rate of *one per cent ad valorem*, from

March 2011 onwards. As such, the coaches manufactured by ICF are subject to concessional excise duty and not falling under 'exempted goods'. Hence, scraps generated during the manufacturing process are subject to excise duty in terms of CETH-7204, wherein it is stipulated that waste and scrap of iron or steel are subject of levy of excise duty.

Records of sale of scrap in ICF, however, revealed that ICF did not collect excise duty from the purchasers of scrap sold from 30 May 2012. ICF incorrectly interpreted the CE Notification (No. 62/95) and treated scrap generated from manufacture of coaches as 'exempted goods' and did not ensure collection of excise duty on sale of such scrap.

Records further revealed that during a visit of the Central Excise team to ICF in December 2013, this lapse was pointed out and demand issued for payment of Excise Duty on scrap sold from 30 May 2012 onwards. Accordingly, ICF had to pay `5.45 crore from its own fund for the scrap sold during the period from 30 May 2012 to 28 February 2014 as ICF had not collected Excise Duty from purchasers of scrap sold. Subsequently, ICF is collecting Excise duty from the purchasers of scrap from March 2014 onwards.

Thus, due to incorrect interpretation of CE notification by ICF, suitable clause for levy of excise duty was not incorporated in the tenders for sale of scrap during the period May 2012 to February 2014. This resulted in additional burden of `5.45 crore on ICF, which was paid to Excise department from its own fund.

On the matter being referred to ICF Administration, they stated (January 2016) that

- In terms of CE Notification No.27/2011(March 2011), waste, parings and scrap arising in the course of manufacture of goods in respect of which the benefit of 'exemption' under CE notification (No.1/2011) is availed are exempted from the whole of the duty leviable thereon. However, to avoid further penal interest, an amount of `5.45 crore was paid by ICF though the contention of Central Excise team was not acceptable to ICF.
- ICF started availing CENVAT credit from April 2014 onwards and hence the value of scrap sold by ICF attracts Excise Duty. Therefore, the collection of Excise Duty from purchasers of scrap from April 2014 onwards is in order.

The above replies cannot be accepted in view of fact that



- CE Notification No.27/2011 (March 2011) exempts waste, parings and scrap arising in the course of manufacture of goods in respect of which benefit of 'exemption' under Notification 1/2011 is availed. This notification further states that this does not apply to wastes, parings and scrap cleared from a factory in which any excisable goods, other than goods in respect of which the benefit of exemption under the said notification is availed, are also manufactured. As there are other goods manufactured by ICF, notification No.27/2011 does not apply.
- In terms of CE Notification No.1/2011 and 2/2011 dated 1 March 2011 coach manufacturing activity was brought to Excise Duty net of *one per cent* if CENVAT is availed and *five per cent* if CENVAT is not availed respectively. As such linking collection of excise duty on scrap with the date of commencement of availing of CENVAT credit is not in order.

ICF had taken decision belatedly to collect excise duty on scrap sold from March 2014 even though payment of excise duty on coaches had commenced from the year 2011 onwards. Thus, incorrect interpretation of excise notification by ICF led to additional burden on Railway to the tune of `5.45 crore.

The matter was brought to the notice of Railway Board in February 2016; their reply has not been received (May 2016).