

Implementation Of Wage Incentive Schemes In Indian Railways - A Study Based On Employee Perception In Select Workshops

S.Vasudevaiah*

Research Scholar, Rayalaseema University, KurnoolSr. Divisional Mechanical Engineer, Hyderabad Division,
SC Railway, Secunderabad

Under the guidance of Shri Prof. S. Sreenivasa Murthy, Dean, Institute of Public Enterprise, Hyderabad.

ABSTRACT

This paper proposes to study the wage incentive scheme being implemented in the Carriage repair shop, Lallaguda of South Central Railway and Carriage repair shop, Tirupati of South Central Railway. The study aims to improve the existing Payment by results scheme (PBR) of Lallaguda workshop and Group Incentive scheme (GIS) of Tirupati workshop. The study covers the salient features of payment by results scheme and group insurance scheme. Under PBR the workers are classified as Direct, Essential Indirect and Indirect workers. In PBR scheme individual incentive is calculated whereas in Group Incentive scheme the incentive is calculated for the entire group. Comparative analysis of PBR and GIS is carried out and questionnaire analysis of both the schemes studied and conclusions are drawn.

Keywords - Group Incentive Scheme (GIS), Payment by results (PBR), Carriage Repair Workshop Lallaguda, Carriage Repair Workshop Tirupati, Incentive Schemes of Indian Railways

Date of Submission: 03-10-2018

Date of acceptance: 15-10-2018

I. INTRODUCTION

For thousands of years' compensation to workers was relatively simple. The working hours of artisans and farm hands were determined by duration of day light and changes in climate and weather. Even the rest days were set apart through holidays and weekly day offs. Under pressure from the rich and noblemen the Just Price Theory of reasonable wages and returns again¹ became prominent in the middle ages as the Catholic church propounded a just wage structure to skilled artisans who were in short supply. The Church thus recognized right of the artisan for more pay and placed them in a higher social group. In the sixteenth century there was decline in the cost of food and shelter which led to a decline in the standard of hiring of workers in England. In the seventeenth century due to the predominance of cottage industries, the labour activities moved to workers' homes. The industrialists who were buying the output from the workers were paying less in the absence of bargaining mechanism on behalf of the workers. The last half of the eighteenth century ushered in Industrial Revolution. Masses of people got their livelihood through industrial advancement. But within a hundred years, the condition of workers had "sweated", employing low wages, excess hours of work and living in unsanitary conditions, mentioned Armstrong (Armstrong: 1932). By nineteenth century efforts were underway in the industrialized countries and the U.S. to regulate hours of work and improve working conditions. However, after the growth of trade unionism the bargaining power of the workers gained momentum and a discernible change in the outlook of the industrialists led to an understanding of the need to compensate the worker adequately. Industries started compensating the workers for contributing to increased productivity.

There is now increasing realization that every organization must offer adequate remuneration to its employees to motivate and induce them to give their best for greater productivity. If the workers are not adequately compensated it would result in migration of the competent and the talented. Therefore, compensation of the workers has acquired strategic proportions in the contemporary knowledge based world. Compensation varies from job to job depending up on the nature of job, required skills, risks involved and up on the working conditions as well as bargaining capacity of labour unions. Compensation cannot be viewed in isolation as it is one of the components of an organization's human resource system. Further, those dealing with employee compensation have to interact with various groups from the top executives to the workers' unions and the worker himself.

¹ According to Armstrong the Just Price Theory of reasonable wages and returns was as old as three hundred years B.C. when Plato and Aristotle opined a person is destined to occupy some position or other like his parents. Therefore, the society owes him or her enough compensation to maintain the same position at the time of his birth.

Dessler defined compensation as “all forms of pay going to employees and arising from their employment”. However, in this phrase “all forms of pay” does not include non-financial benefits but include only direct and indirect financial compensations. Martocchio defined compensation as “rewards which employees receive for performing their jobs”.

Compensation includes a plethora of both financial and non-financial benefits offered to the employees for their services. It includes wages, salaries, benefits like insurance, medical reimbursement, leave travel, paid vacation, etc. for services rendered to the organization. Monetary payments are direct form of compensation to the employees and have a lot of impact motivating them. The aims of compensation systems are 1. To attract competent workers to the organization, 2. To motivate the employees for better performance, and 3. To ensure competent workers do not leave their employer for greener pastures. Since compensation to employees includes direct and indirect benefits a package can be planned in various ways.

Direct or Base compensation refers to monetary benefits which include as many of: salary, house rent allowance, conveyance allowance, leave travel, medical reimbursement, special allowances, bonus, provident fund and gratuity. as many or all from the illustration below:

Indirect or Supplementary compensation is non-monetary benefits to the employees as a welfare measure and may include as many or all of: Leave policy, Overtime policy, car and scooter advance, hospitalisation, insurance, leave travel, retirement benefits, holiday tours, flexible timings etc.

Several compensation systems have been formulated based on the various aspects of compensation components like: Systems with worker’s earnings varying in the same proportion as output; Standard hour system; Systems with worker’s earnings varying proportionately less than output; Systems with worker’s earnings varying proportionately more than output; Accelerating premium systems; Group systems; Department or plant systems; and Systems for indirect workers. While these broadly deal with the compensation package on total, in this study we are concerned with incentive bonus system which is a part of the compensation system. From here onwards this discourse attempts to throw more light on the two principal types of incentive bonus systems and subsequently on the comparison and contrast of the two principal incentive schemes in selected workshops of South Central Railway, Secunderabad.

1.1 Significance of the study

This study is the first of its kind on employee incentive bonus schemes in the Indian Railways. Through this study the research scholar proposes to contribute in a big way for attaining more passenger satisfaction for railways through its suggestions for improvement of the incentive schemes of railway employees.

Indian Railways has been implementing employee incentive bonus schemes formally since 1950s. Though several studies were carried out on the functioning of the Indian Railways in general, so far not a single study was conducted on the crucial aspect of incentive bonus for employees of railway workshops. Hence, there is an urgent need to conduct an in-depth study of the employee incentive bonus schemes in the railway workshops. This study is the first of its kind on the incentive bonus schemes for railway employees with special reference to the workshops of South Central Railway.

Presently two different types of incentive bonus schemes are being implemented in Railway Workshops, namely Payment by Results (PBR) or Chittaranjan Locomotive Workshop (CLW) scheme, and Group Incentive Scheme (GIS). Originally the PBR was introduced in the Railway Repair Workshops of the Mechanical Department and later it was extended to Signal and Telecommunication workshops, Civil Engineering Workshops and Electrical Sections attached to the Mechanical Workshops. This incentive scheme is also known as system of Payment by Results (PBR). Out of around 40 Railway workshops in the country today the PBR plan is being implemented in around 30 workshops covering nearly 70 to 80 thousand employees.

Both the above have certain advantages and disadvantages. While the GIS was introduced in 1989, the CLW pattern of incentive is being implemented since 1960. Since both the schemes are under implementation for nearly three decades and more it will be good for the Railway and the employees to adopt a more contemporaneous approach to incentive schemes to improve productivity.

It must be noted, the Indian Railways is the most common mode of transport in the country handling huge passenger traffic of over 81 crores per year utilizing over 64,193 passenger coaches and carriages. Repair and upkeep of the carriages is crucial for railway operations and passenger comfort. The railway workshops in the country have to function on a continuous basis to overhaul, repair, maintain and upgrade passenger facilities in the coaches.

In this “Implementation of wage incentive schemes in Indian Railways – A study based on employee perception in selected workshops”, it is proposed to carry out an in-depth study of the two systems in two of the South Central Railway workshops to identify which one is better and what are the changes needed to improve effectiveness of the systems.

II. SURVEY OF LITERATURE

Henderson says properly formulated and implemented incentive programmes can lead to an entirely different way of employee behaviour than wages and salaries. To have motivational value, incentives should have components that recognize employee contributions beyond the call of normal duty assignments. Such contributions demand additional inputs of intellectual, emotional and physical efforts from the employees. Incentives are individual, team, and situation driven apart from organization and market driven. Incentives are variable costs; they are not fixed. They stimulate increased intellectual, emotional and physical efforts. They lead to improved individual and team performance which in turn increases work and the organization productivity. Productivity improvement will offer increased and improved output, reduced costs and higher profits.

Incentive plans can be broadly classified into three categories: i). Individual incentive plans, ii). Group incentive plans, and iii). Company – work incentive plans. These are mostly short term incentive plans.

According to Dulles, individual incentive plans, also called Payment by Results (PBR), are most appropriate under three conditions. First, employee performance can be measured objectively; second, when employees have enough control over work outcome, they are successful; third, they are appropriate if they do not create unhealthy competition among employees leading to poor quality of output. Even if standards are set those employees who meet or exceed the standards set by the employer may be subject to intimidation by workers whose work falls below the standard and unions may use the intimidation tactics to prevent raising plan standards.

According to Peck, there are four common types of individual incentive plans: Piecework, Management, Behavioural encouragement and Referral. Companies generally use one or two-piece work plans based on individual hourly production, and plan with individual performance standards with objective and subjective criteria.

Lazier said, companies using piece work plans will derive two advantages of incentive effect and sorting effect. The incentive effect refers to a workers' willingness to work diligently to produce more quantity of output than just attending the work without putting effort. The sorting effect refers to the employee's choice to leave their employer for another job presumably for one without incentive. Most basic distinctions among PBR plans are the measure of pay calculations. Mostly it is a straight forward measure of the quantity of output, the number, weight or volume of the produce. These are called in general piece-work which carry rewards based on price per unit of production.

Marriott after detailed study concluded "there is no reliable way of measuring the effectiveness of incentive payment systems and published experimental evidence in their favour is meagre and rarely conclusive. It is however supported by case and comparative studies, which though not always free from defects reinforce the large body of opinion that human beings, given the right conditions are stimulated to produce more if pecuniary inducement is directly linked to the effort they make".

In the last quarter of the nineteenth century a pioneering industrial engineer Frederick Taylor found that a slight increase to the employee's earnings would considerably increase the industrial output. Though Taylor's system of Scientific Management is straight forward and simple. He offered an example of Prouss theory in operation. Taylor convinced Schmiot, a pig iron plant owner that he would load 47 tonnes of pig iron a day instead of 12.5 tons per day, if he could pay €1.85 per day instead of €1.15. Taylor could accomplish this dramatic increase in output of 376 percent through the four principles of scientific management he addressed: i. Analyzing the job, ii. Selecting the right person and training him how to perform the assignment properly, iii. Cooperating (means providing necessary tools) with the employees to ensure work is done as per identified assignments and production standards, and iv. Dividing the work to be done by the management and the work to be done by the employees. Taylor encountered many hurdles in selling his ideas to the managements. To many industrial executives and politicians Taylor's theories appeared to be of Marxist or Socialist ideology. But by 1912 a congressional committee subpoenaed Taylor for first-hand knowledge of his ideas on scientific management. The underlying idea of Taylor's scientific management is well-trained employees performing expertly designed jobs when incentives are paid will increase their earnings with expanded efforts significantly increasing the productivity and profitability of the organization.

Dr. M. Surat Kumari and Malla Reddy Tata Reddy studied the impact of employee welfare facilities on job satisfaction the Secunderabad Division of South Central Railway. The basic aim of welfare of employees is to enrich their life and keep them contented. Article examined welfare of the South Central Railway employees from three major aspects – health care, suitable working time and appropriate salary. The study found most of the Secunderabad Division Railway employees are satisfied with the welfare facilities provided to them.

Dr. Asiya Choudhary and Roohi Iqbal made an empirical study on effect of welfare measures on employees' satisfaction in Indian Railways. They found that though the Railways have done a lot in providing welfare facilities for welfare of its employees they are not sufficient and moreover there is no improvement over

the years in any of the schemes. The Railway administration mentioned inadequate finances as an important reason for not expanding the welfare facilities of employees. They mentioned that though there is a huge increase in the staff benefit fund to the extent of 800% it was not properly utilized.

A perusal of research publications on Indian Railways revealed that the areas of coverage are predominantly on consumer satisfaction followed a few on employee welfare and satisfaction, on railway operational issues and on other issues pertaining to the railways. Practically, there is no research publication on issues of compensation management in the Indian Railways. Thus, the current study is taken up having noticed a yawning gap in this critical area of compensation management. It is ardently hoped, this study which is the first of its kind on employee bonus incentive schemes in the Indian Railways would spur further researches on this virgin area of compensation management.

III. OBJECTIVES AND HYPOTHESES

The following are the objectives of the study and the hypotheses proposed to examine in this.

3.1. Objectives of the study: Following are the objectives of the study

1. To study the wage incentive schemes of India Railways
2. To make a comparative evaluation of incentive schemes
3. To suggest suitable changes in the present schemes to improve productivity and efficiency of the employees, and
4. To study the employees' perception about current incentive schemes.

3.2. Hypotheses

It is proposed to examine in this exercise the following hypotheses with regard to the direct and indirect incentives from standpoint of the Indian Railways in respect of PBR and GIS being implemented in Lallaguda Workshop, Secunderabad and CRW Tirupati:

1. According to Marriott, "There is a large body of opinion that human beings, given the right conditions are stimulated to produce more if pecuniary inducement is directly linked to the effort they make". (Marriott: 1968.)
2. "Motivational value also increases when the timing of the delivery of the rewards is closely approximate the demonstration of a behaviour, the completions of an assignment or the achievement of a result. These elements of motivational theory support the concept that the most powerful short-term incentive is one that relates the individual to the overall performance of the organization. This in no way implies that work unit² or organization-based short-term incentives have little motivational value. It just means that these two basic kinds of incentives are weaker than those relating to the contribution of the individual or those relating to team performance when the individual is a team³ member." (Henderson; 2013)

IV. RESEARCH METHODOLOGY

The data required for the study will be obtained from primary and secondary sources. Secondary data will be collected from the annual reports of Indian Railway workshop reports and performance reviews of workshops. Primary data will be collected through issue of a questionnaire to sample respondents drawn from various categories of employees like officers, Senior Section Engineers, Junior Engineers and Technicians. The data in the case of first three categories will be obtained from selected employees of 10 Officers and 100 Senior and Junior Engineers. The data with regard to the fourth category, viz. Technicians will be collected from selected samples of five hundred Technicians.

V. SCOPE LIMITATION AND PERIOD OF STUDY

The period of study will be for the years from 2006 to 2016. The study is limited to the in depth examination of two incentive schemes, namely PBR or CLW pattern and Group Incentive Scheme(GIS) only. The study is restricted to Lallaguda and Tirupati Workshops only because of time constraints and viability matters.

VI. LALLAGUDA AND TIRUPATI WORKSHOPS – BRIEF

6.1. Carriage Workshop, Lallaguda, Secunderabad

The Lallaguda Carriage Workshop was established in 1893 as the Locomotive, Carriage and Wagon Workshop of the Nizam State Railway. The Government of Hyderabad took over direct control of the Railways

² Work unit in this context is a unit consisting of a number of employees comprising more than a team. Different operations are performed in the work unit, but criteria are available for rating the performance of the identified work unit.

³ A team is a limited number of employees preferably not more than 11 or 12 working together to perform well-defined activities and achieve specific results

in 1930 and renamed it as the Nizam Guaranteed State Railways (NGSR). With this the Carriage Workshop also came under government control.

The Workshop complex is one of the oldest surviving examples of modern Industrial Architecture in the twin cities of Hyderabad and Secunderabad. A few structures in use in the workshop today date from the time of the workshop's initial commissioning. The precinct provides us with a glimpse of not only the industrial advances made over more than a century but is also a repository of heritages from a bygone era. Restored wagons, coaches and a variety of artefacts relating to railway history have been preserved and quite a few are displayed at the site. Notable among these one finds a meticulously restored coach of 1886 vintage.

The sanctioned manpower of the workshop is 3303 while presently there are only 2849 workers with 454 vacancies. For the current financial year, the targets fixed for the workshop include 130 coaches and 200 IOH of bogies. The main activities of the workshop include periodical overall hauling of BG coaches, supply of IOH bogies and wheel sets to the divisions.

6.2. Carriage Repair Workshop, Tirupati

The Carriage Repair Workshop (CRW), Tirupati was inaugurated on 25th December 1980 by the then President of Indian Dr. N. Sanjeeva Reddy. The Workshop is at a distance of eight KMs from Tirupati and three KMs from Renigunta.

The Workshop had made a beginning with a monthly outturn of 12 coaches in 1986-87, gradually reached the level of 40 coaches per month in the year 2000-01. With introduction of Group Incentive Scheme in January 2002, the outturn had touched to a level of 60 coaches per month. This was achieved without induction of additional manpower by redeploying existing men. Further, on sanction of additional 390 posts @135R, the outturn ultimately reached 85 coaches per month since April 2007, and for the current year the revised target is fixed as 90 coaches per month and supply of IOH bogies to Divisions.

It is the First Coach Repair Shop in Indian Railways to implement RITES Group Incentive Scheme (GIS). Neutral Control Examination has been started since May 1998 in CRS. There has been no local passing ever since.

The main Activities of the shop are POH of POH of Coaches, calibration of instruments, supply of wheels and IOH bogies to divisions and training of staff in basic training centre.

VII. RESULT AND DISCUSSION

There are two different types of incentive bonus schemes are being implemented in the Lallaguda and Tirupati workshops of South Central Railway. In the carriage repair workshop, Lallaguda the Payment by Results (PBR) incentive scheme is being implemented whereas the Group Incentive Scheme (GIS) is under implementation in CRW, Tirupati. Before a comparison of the schemes is made, salient features of the schemes are given hereunder.

7.1. Salient Features of Payment by Results (PBR)

- The first formal incentive scheme was introduced in Chittaranjan Locomotive Works in December 1954.
- Time is the basis of this scheme and the time standards used were predetermined after systematic work measurement. The various operations in the workshop are subjected to time study.
- This incentive scheme is also known as "The system of Payment by Results."
- Under the incentive bonus scheme, the Basic wages are guaranteed to all the workers.
- The allowed time are so fixed that the workman of normal ability may earn 33-1/3% bonus over and above his basic wages in respect of period spent on piece-work jobs.
- This allowed time includes all allowances such as fatigue, general handling, and gauging and production bonus allowance.
- The scheme is based on the concept that an average worker while working under non-incentive conditions is assumed to be working at a rating of 60 units. The same worker while working under incentive conditions would be expected to improve his rating to 80 units, i.e. 33¹/₃% more.
- It is expected that an average worker would complete an operation in 3/4 of the allowed time.
- Time saved cannot be carried out to the next month.
- The ceiling limit of profit is fixed at 50% of the time taken in each of the operation.
- The incentive workers are classified as Direct, Essential Indirect and Indirect Workers.
- printing.
- **Losses:** where losses, however, small are made more or less consistently by the majority of workers, detailed investigations need to be instituted to find out causes contributing to this result with a view to take remedial and corrective measures.

- **Incentive Bonus to essential indirect workers(EIW) and Supervisors:** Supervisors are paid 80% incentive of DWs.
- Supervisors and EIWs are paid 80% of bonus of DWs.
- **Deduction from supervisors for idle time.** Shop Chageman/mistries are directly responsible for idle time booking and proportionate deduction in the incentive is made in case of idle time booking.
- **Overtime working in Incentive sections:** Ordinarily there should not be any overtime booking in sections under incentives. Apprentices are not eligible to participate in the incentive bonus scheme.

7.2. Salient Features of Group Incentive Scheme (GIS)

- The coverage under the Incentive Scheme will be limited to the defined Incentive Production Groups, Support Shops Incentive Group and Support Departments Incentive Groups.
- The Authorised Manpower Strength for each Incentive Production Group will be derived from the management approved Annual Production Plan.
- The monthly targets for each month for each Incentive Production group are kept directly proportional to schedule number of working days in the month.
- Idle time booking is permitted only in the event of failure of external power supply, when it exceeds 60 minutes at a stretch for each occurrence in the month. Idle time booking on no other account is permissible.
- There is no provision for plus cards booking in the Scheme.
- No ministerial category personnel will be covered under incentive working in any incentive covered Group.
- All the on-roll members of the group from unskilled level up to SSE level are included as members of the group and eligible for computed incentive payment.
- Group wise performance is determined from physical dispatches made by supplying group and accounted for as received by receiving group. All the different products dispatched are converted to standard Production Units to get a common accounting unit.
- The “No Bonus Limit” is the group Output which is 0.75 of Group Production Norm.
- A coach Users Defect Reports Scheme has been incorporated which adversely effects the accountable dispatches when defect reports on Tirupati Workshop turned out coaches are received by the workshop. The details given in Chapter 7.
- Excessive detention of coaches in individual shops and plant as whole attract negative effect on group performance.
- Defects on Products dispatched by supplying group to receiving group caused adverse effect on supplying group incentive performance.
- Effect of Plant Production Index (PPI) for total plant performance gets included in group incentive earning calculations.
- Any time spent away from the individual’s work place adversely affects the concerned individual member incentive earning.
- Overtime booking though permitted causes adverse effect on group performance and also individual member earnings.
- Individual member incentive earning is directly proportional to member’s own clocked in hours during the month.
- To assist in getting better attendance at work by group members a group Attendance Factor is included in the scheme.
- Different grades of incentive covered staff have defined Incentive Earning Factor as will be approved by Railway Board. Incentive amount payable to individual members is derived using the applicable. Incentive Earning Factor in accordance with scheme formulae.
- There is no top limit on Incentive Earnings in a calendar month period under the scheme.
- The Gross Production Index (GPI) for any Incentive Production Group gives a Weightage of 0.7 for Group Production Index (PI) and of 0.3 for Plant Production Index (PPI).
- The Support Shops Incentive Group has been given a Support Shops Incentive Linkage constant of 0.80.
- The Support Departments Incentive Group is proposed for coverage under scheme with Support Department Incentive Linkage constant of 0.50.
- Required adjustment of group on-roll strength can be done freely by needed inter-group manpower adjustments on workload considerations at any time during the month.
- Coaches output accountal will be done coach type wise only and not by category of repairs executed.
- The accounting period under scheme is applicable calendar month.
- Quality Improvement Features in the Incentive Scheme.

- The basic principle of self-inspection by workshops has been built in and requisite done in this direction are duly accounted for.
- Whenever any product is found to have defects as determined by receiving group, then any man-hours deployed to remove the defects by receiving group flow back to supplying group based on reports made by receiving group. This has the effect of increasing the workload on supplying group thus giving a in-built mechanism against making defective product supply by supplying group.
- The present system of examination by Neutral Train Examiner (NTXR) before coach dispatch is retained.
- A Coach Users Defect Points scheme has been incorporated. The effect of Defect Reports is to deduct coaches for per 50 points of accumulated defects.
- In the event any coach turned out from Tirupati Shop after repairs is detached within 3 months enroute when in service then heavy back flow of penalty points is envisaged. This will help for increasing awareness in shop to minimize defects in coaches being turned out from Tirupati Workshop.
- Similarly marking of Tirupati Shop repaired coaches to Sick Lines when in service will attract negative penalty points.

7.3. Employees Earnings – A Comparison of GIS and PBR

A comparison of the earnings of the employees covered under PBR and GIS reveals the advantages of one or the other scheme for the employees. During the month of May 2018, the average earnings per employee under each scheme and the total incentive amounts received together with the number of employees is given in the following table.

Table 7.1 Total and average incentive bonus earned by the employees of Lallaguda (PBR) and Tirupati (GIS) workshops.

S. No	Designation	Average incentive earned (Rs.)		Total incentive earned (Rs.)		Total no. of employees	
		GIS	PBR	GIS	PBR	GIS	PBR
1	SSE*	2742	3045	21933	39591	8	13
2	JE [@]	5119	3182	35834	22271	7	7
3	Sr.Tech [§]	5728	4078	315037	289516	55	71
4	Technician I	4995	3501	534507	203080	107	58
5	Technician II	4458	4630	89158	115762	20	25
6	Technician III	3370	2758	104481	135129	31	25
7	Helper	2853	1893	105568	49225	37	26

*SSE – Senior Section Engineer, [@]JE – Junior Engineer, [§]Sr. Tech – Senior Technician

From the above table the GIS appear to benefit the employees more than the PBR. The average incentive earned by five categories of employees is more than the PBR. Naturally the total incentive amount paid to the five categories is more than that of in the PBR. If percentages are taken into consideration the JEs covered by GIS have earned 60.87% more than their counterparts covered by the PBR followed by Helpers with 50.71%, Technician - I with 42.67% and Senior Technician with 40.46% and Technician III with 22.18%. However, in respect of Technician II and SSE those covered by PBR have earned more average incentive than those under GIS. With regard to SSEs those covered by PBR earned on average 11.05% more than those covered by GIS and with regard to Technician II those covered by PBR earned a increase of 3.85% over GIS. Overall it can be concluded that the employees covered by GIS are more benefited than those covered by PBR.

7.4. Other comparable parameters of GIS and PBR

Various other comparable parameters of both the schemes indicate the efficacy of one scheme or the other in certain aspects as per following table.

Table 7.2.: Various other comparable parameters of GIS and PBR

S. No	Parameter	Measure	GIS Performance		PBR Performance	
			(Year)	2017	(Year)	2017
1.	Cycle time	Days	19.21 (2006)	8.72	15.85 (2006)	6.42
2.	Man-Power Ratio/ Coach/Year.	Nos.	0.865(2015)	0.903	1.5620 (2015)	1.32
3.	Total Incentive Earned	Cr. Rs.	5.71 (2010)	6.80	5.27 (2010)	6.80
4.	Incentive Percentage	%	47.52 (2010)	43.84	38.86 (2010)	48.12
5.	Avg. Unit Cost of POH	Rs. Lakhs	11.03 (2014)	13	11.46 (2014)	14
6.	Corrosion Outturn of coaches	Nos.	123 (2014)	291	189 (2014)	77
7.	Overall Outturn of Coaches	Nos.	961 (2006)	1180	1454 (2006)	953
8.	Overall Outturn of AC Coaches	Nos.	93 (2012)	121	198 (2012)	181
9.	Number of Men available in PCO/IED	Nos.	19 (2008)	19	128 (2008)	126

The above has to be studied not only from the physical advantages but also from certain intrinsic and inherent aspects as follows.

7.5. Cycle time of coaches

All carriages, both AC and Non- AC took lesser time to get repaired in Tirupati workshop than in the PBR covered Lallaguda workshop. The trend below shows that the overall cycle time for both the workshops has been coming down from 2006 onwards. But since 2006 CRW Tirupati is taking lesser time to repair coaches than Lallaguda workshop. For example, in 2006 the Lallaguda workshop took 21.19 % more time and in 2017 it has taken 35.82% more cycle time. The table and graph below illustrate the downward trend in overall cycle time in both the workshops.

Table 7.3: Cycle time Coaches of Lallaguda(LGDS) workshop and Tirupati workshop(TPTY)

Year	Cycle time LGDS	Cycle time TPTY	Year	Cycle time LGDS	Cycle time TPTY
2006	19.21	15.85	2012	15.05	14.00
2007	16.47	16.44	2013	14.35	15.23
2008	19.61	14.27	2014	13.85	14.98
2009	16.81	18.63	2015	11.95	13.86
2010	16.26	21.82	2016	9.56	8.86
2011	12.09	16.35	2017	8.72	6.42

Graph 7.1 Overall Cycle Time



In 2015, a carriage on average spent 15.98% more time for repairs in CRW Tirupati than in Lallaguda workshop. By 2017 it has come down to 26.37 % less time than Lallaguda workshop. From tables 9.3, 9.4. and 9.5. above it is clear that it has been taking more time for Tirupati workshop than in Lallaguda workshop.

7.6. Manpower Ratio

The Manpower ratio of PBR covered Lallaguda workshop is more than that of the GIS covered CRW Tirupati in 2015 and 2017. While in 2015 the Manpower ratio of Lallaguda workshop was 80.47 % more than that of Tirupati, it was 46.09% more than Tirupati in 2017.

Table 7.4 Man Power Ratio

Year	GIS in Tirupati	PBR in Lallaguda
2015	0.8655	1.5620
2017	0.9035	1.3200

Therefore, the PBR covered Lallaguda workshop is utilizing more Manpower than the GIS covered Tirupati workshop for repairs and servicing of carriages.

7.7. Incentive Earned

In 2010 the employees covered under GIS in CRW Tirupati earned 8.29% more than the employees covered under PBR covered Lallaguda workshop. But this was reversed in 2017 as the employees covered by PBR in Lallaguda workshop earned 12.21% more incentive bonus than their colleagues in GIS covered CRW Tirupati workshop.

Table – 7.5: Incentive Earned in Lallaguda (LGDS) and Tirupati workshop(TPTY)

Total Incentive Earned (Rs.)		
Year	TPTY	LGDS
2010	57106786	52734503
2017	60603261	68006027

7.8. Incentive Percentage

In 2010 the GIS covered employees CRW Tirupati earned 22.26 % more than the PBR covered employees of Lallaguda workshop. But in 2017 it was reversed as the PBR covered employees of Lallaguda workshop earned 9.76% more than CRW Tirupati employees.

Table – 7.6: Incentive percentages

Incentive percentage		
Year	GIS Tirupati workshop	PBR Lallaguda workshop
2010	47.52	38.86
2017	43.84	48.12

7.9. Load Lifted

The PBR covered CLW Lallaguda is clearly ahead of GIS covered CRW Tirupati in the load lifted man hours in 2010 and 2017. While in 2010 PBR Lallaguda achieved 48.07% more load lifted man hours than CRW Tirupati, in 2017 it has again achieved more load lifted man hours to the extent of 42.43% than CRW Tirupati.

Table – 7.7.: Load lifted Man-hours per year

Load lifted Man-hours per year		
Year	GIS Tirupati workshop	PBR Lallaguda workshop
2010	2658784	3937107
2017	2994808	4265600

7.10. Average Unit cost of POH

The average unit cost of POH from 2014 to 2017 is more for Lallaguda workshop than Tirupati. While in 2014 the average unit cost of POH of GIS covered CRW Tirupati was lesser by 3.74% than Lallaguda workshop. In 2017 the Tirupati workshop has shown 7.13% lesser unit cost than the Lallaguda workshop. The table and the graph below explain the trend in rising cost of POH.

Table – 7.8.: Average Unit cost of POH (Rs.) at Lallaguda(LGDS) workshop and Tirupati (TPTY) workshop

Year	Unit Cost LGDS	Unit Cost of TPTY	Year	Unit Cost LGDS	Unit Cost of TPTY
2012	1037000		2015	1165000	1160042
2013	1137000		2016	1199000	1134125
2014	1146000	1103111	2017	1400000	1300250

Graph – 7.2: Average unit cost of POH



7.11. Corrosion Outturn

The Lallaguda workshop employees covered under PBR have achieved 53.65% in corrosion out turn over CRW Tirupati in the year 2014 but in 2017 the GIS covered CRW Tirupati achieved an overwhelming increase of more than 278% than PBR covered Lallaguda workshop.

Table – 7.9.: Corrosion out turn coaches at Tirupati and Lallaguda workshops

Corrosion outturn (No. of Coaches)		
Year	TPTY	LGDS
2014	123	189
2017	291	77

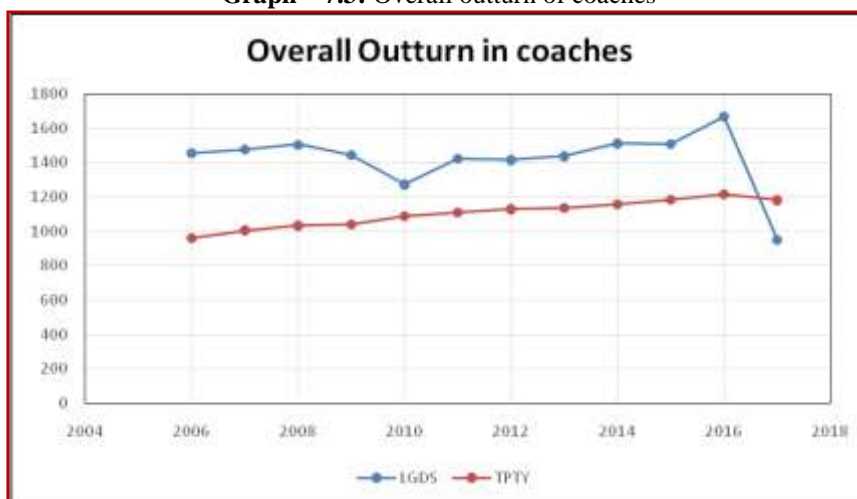
7.12. Overall Outturn

In 2006 the PBR covered CLW Lallaguda achieved 51.30% more yearly out turn of AC coaches than GIS covered CRW Tirupati. But in 2017, CRW Tirupati achieved 23.81% more out turn than CLW Lallaguda. The table and the graph below illustrate the increase in trend in overall out turn in both the workshops from 2016 onwards. However, in 2017 there was a huge fall in the out turn of Lallaguda workshop and a little fall in the out turn of CRW Tirupati. It was said that the feeding of coaches for repair has come down considerably in both the workshops during the year.

Table – 7.10.: Overall out turn (coaches per year)

Year	LGDS	TPTY	Year	LGDS	TPTY
2006	1454	961	2012	1416	1127
2007	1475	1004	2013	1436	1135
2008	1504	1032	2014	1511	1156
2009	1444	1040	2015	1507	1181
2010	1273	1087	2016	1666	1213
2011	1423	1109	2017	953	1180

Graph – 7.3: Overall outturn of coaches



7.13. Yearly Outturn of AC Coaches

The Lallaguda workshop had achieved an increase of 112.90% and 49.58% more out turn of AC coaches. In 2012 and 2017 respectively, over the CRW Tirupati.

Table – 7.11: Yearly Outturn of AC coaches

Yearly out turn AC coaches		
Year	GIS Tirupati workshop	PBR Lallaguda workshop
2012	93	198
2017	121	181

7.14. Actual Manpower Available (PCO and IED Staff)

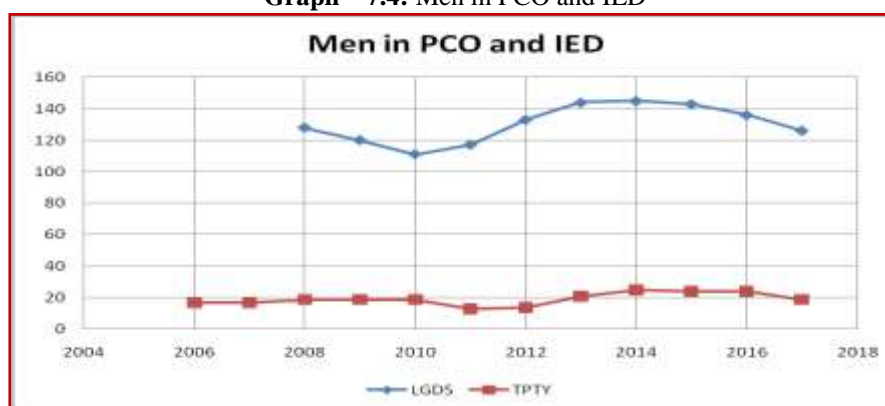
The Production Controlling Organization chases the work from one shop to other to ensure continuation of work. Besides it carries out stage inspection in the sub-shops and moves the product from one shop to other which passes through inspection. PCO is also responsible for work allocation among the shops. The job of PCO is being attended to by the Industrial Engineering Department (IED) in CRW Tirupati. The table and the graph below depict the overwhelming saving in Man power to the extent of 573.68 % in 2008 and 563.15% in 2017. The graph and the table below depict how with lesser men the work inspection is being carried out in

CRW Tirupati. This is possible because of the self-inspection feature of GIS which saves man power as well as documentation work.

Table – 7.12: Manpower Available i.e. PCO and IED staff

Year	Lallaguda workshop	Tirupati Workshop	Year	Lallaguda workshop	Tirupati Workshop
2006		17	2011	117	13
2007		17	2012	133	14
2008	128	19	2013	144	21
2009	120	19	2014	145	25
2010	111	19	2015	143	24
2016	136	24			
2017	126	19			

Graph – 7.4: Men in PCO and IED



The CRW Tirupati which is covered under GIS has certain exclusive quality control features over the CLW Lallaguda. These features mark out the Tirupati workshop especially over Lallaguda workshop. For example, under GIS over time booking is taboo. But in PBR covered Lallaguda workshop there is over time booking which is coming down over the years. For example, 10424 hours of overtime was booked in 2011 and this has come down to 5111 hours of overtime booking in 2017. At the same time overtime booking in CRW Tirupati is nil because it was not permitted under GIS. Other features which stand out in respect of maintenance of quality of repair are given in the table below.

7.15. Some Exclusive Features of GIS in Tirupati Workshop

Table 7.13: Exclusive Features of GIS in CRW Tirupati

S. No	Parameter	Measure	Performance	
			(Year)	2017
1	Idle time booked	Hours and days	Nil (2006)	Nil
2	Incentive deducted due to quality linkage factor	Rs in the year	1,12,794 (2006)	7,07,986
3	Incentive deducted due to failure with 100 days	Rs in the year	3,50,526 (2006)	2,20,3806
4	Rework in the year	Hours	69,720 (2008)	54,471
5	Average group attendance factor	--	0.9969(2008)	0.9932
6	Coach holding factor	--	1 (2006)	1
7	Coaches not taken into account due to excess POH	Number	Nil (2006)	Nil

From the foregoing it is evident that GIS has inbuilt excellent features of self-inspection, quality control and penalization for bad work as well as absenteeism and failure of repairs. It is more or less a self-administering programme which is to the advantage of the organization as well as the consumers of the public utility. It would make an excellent incentive scheme if certain changes are brought about like, removal of ceiling limit on maximum bonus in respect of CRW Tirupati.

7.16. A Comparison of GIS and PBR

a. The GIS under implementation under CRW Tirupati appears more advantageous to employees since the incentive bonus earned by employees is more than their colleagues in CLW Lallaguda where the PBR individual incentive scheme is under implementation.

- b. Employees in both the schemes are happy with the incentive they are receiving under the schemes – whether PBR or GIS. This is because they are the masters of their work and they need not depend upon the other group members with regard to the assignments allotted to them.
- c. However, the grouse against PBR is it requires more documentation, more supervision which is not prevalent in GIS.
- d. The quality of the work covered under GIS has gone up in CRW Tirupati because of strict quality control factors. However, the cost of POH under GIS is more because the employees are under the tyranny of quality control factors. The unit cost increases because the employee utilizes more material than in PBR.
- e. The ceiling limit of 15% on incentive for supervisors is a dampening factor because it alienates the supervisors from the group whose members earned more when they work more. Similarly, the grouse of the group members is the ceiling limit of 50% which they want to be removed.
- f. GIS is an employee friendly and pro-organization incentive scheme. It benefits the employees with additional income and the Railways with increased turn over with lesser manpower and even lesser documentation as also very little monitoring.
- g. In both the schemes training is not much liked by the employees because they are denied of incentive bonus when they attend the training. However, in a technical organization training is essential for skill up gradation, particularly in the contemporary technology savvy organizations.
- h. With the implementation of both the incentive schemes there is considerable savings for the Railways. For example, through the implementation of PBR the net saving and cost of labour was estimated at 2.19 crores which is on average the salary of 566 additional employees. Time saved with the blessing for the Railways because the coaches will be repaired in time. This proves Taylor's example of process theory in operation. Taylor convinced Schmidt, a pig iron plant owner that he would load 47 tonnes of pig iron a day instead of 12.5 tons per day he could pay €1.85 per day instead of €1.15. Taylor could accomplish this dramatic increase in output of 376 percent through the four principles of Scientific management¹⁸.
- i. There is deduction in incentive for failure of repairs within 100 days in GIS for nine years from 2006 to 2017. However, this feature is not there in PBR covered Lallaguda workshop. Such a feature is essential to maintain quality of repairs and output.
- j. The GIS is very rigid and any changes in the implementation of the scheme cannot be introduced easily. Any changes required needs to be approved by RITES only.
- k. Standard Production Unit (SPU) is applicable for individual production shops in GIS. SPU is a agreed standard Production Unit which is defined for each production shop. All the production accountal for the shop has also the standard capacity of the shop are expressed in the applicable SPUs. The SPU is also applicable for individual production shop which is part of the group. This concept of standard production unit is applied in the GIS, whereas in PBR the SPU is not applied.
- l. There is no provision for plus cards in the GIS. Plus, card is "Extra time permitted over the allowed time due to excess machine work required for casting, forgings etc, hard material, defects in the machine for which worker is not responsible and change in the batch quantity against work order.
- m. Idle time shall be chargeable against shop on cost of work order. However, in PBR in each case up to 15 minutes' idle time may be allowed against job card concerned without accounting as idle time. In respect of GIS idle time booking is applicable only in the case of failure of external power supply exceeding 60 minutes at a stretch for each occurrence in a month. Less than 60 minutes of power failure cannot be booked as idle time.
- n. Coaches which were not repaired for more than two months, the concerned shop attracts negative effect on its performance. There is no such adverse effect in the PBR scheme for inordinate delay in repairs.
- o. In the GIS a coach which was repaired and found defective is evaluated and given points. The concerned shop/group will be penalised for the defective repairs. Whereas there is no penalisation in respect of PBR.
- p. In the GIS if the group attendance falls below certain percentage it will affect the overall group earnings. But in respect of PBR since it is an individualised scheme there will not be any adverse effect on the incentive earnings. In short the individual is the master of his earnings whereas in the GIS the individual is at the mercy of the group.
- q. Gross production Index (GPI).** In the GIS when a group completes its production target at forwards its output to the next shop it will get 0.7 Weightage as GPI and it will get remaining 0.3 for plant production index only after the entire product rolls out of the workshop. This means that the workers in the groups will get 100% of their incentive bonus only after the final product is dispatched. But in the case of PBR a worker who has completing his assigned job will get his 100% bonus as soon as he completes his job.
- r. Inspection wing:** In the PBR a separate inspection wing examines the output and passes it for payment of bonus to the worker if the output is satisfactory. In the case of GIS the worker does self-inspection and passes the output he has turned over. However, he and his group is responsible for any defective output and will be penalised under this scheme.

s. **Documentation:** The PBR involves an elaborate system of record maintenance and allocation of labour. There are as many as nine documents 1. Time book, 2. Time sheet for the month, 3. Job cards, 4. Squad summary card, 5. Idle time cards, 6. Monthly time sheet for indirect worker, 7. Monthly statement of Leave availed by the workers. But in the GIS the system is simple.

t. **Rating:** In the application of Rating scale fixed by the ILO there is a difference with regard to GIS and PBR. In respect of GIS the rating scale of 100 is followed whereas in PBR a rating scale of 80 is observed.

u. **Industrial Engineering Department (IED):** In the GIS the subgroups like planning, PCO, QSD MDRG, computer cell was merged and formed a new department called Industrial Engineering Department. The new IED was categorised in to three such as

- Capacity planning, methods examination, process planning, materials planning, manpower planning.
- Implementation of progress function and maintenance ISO 9002 system.
- Implementation of incentive scheme in Tirupati Workshop.

7.17. Comparison of the Primary Data of GIS and PBR

A comparison of the views of the beneficiaries of both GIS and PBR will reveal the perceptions of the employees with regard to their incentive scheme as well as the organization.

7.18. Opinion of the CRW, Tirupati Employees

The officers, supervisors and technicians of GIS are highly satisfied about the quality of output. However, they felt it is not appropriate to prescribe 15% incentive bonus limit to SSE. They are agreeable for the self-inspection responsibility bestowed on them under GIS. The workers also have no objection for the responsibility of self-inspection bestowed on them.

There is a strong assertion among the officers and technicians that the work culture is good under GIS. Both the sections asserted that under GIS the relations between supervisors and workers is good. However, both the sections emphatically responded that technicians need not be denied incentive bonus while on training since they felt that denial of incentive bonus while on training is not motivating the technicians to opt for training. Both the sections disagreed with the view that reduction of incentive bonus on account of rework is appropriate. They have also opposed the present system of ceiling limit of 50% on incentive bonus. However, both sections opined that when there is no ceiling limit on incentive bonus the technicians may strain more which will affect their health. They have also agreed that booking idle time when the power cut loss is for more than one hour is appropriate. Both the sections agreed that the concept of equated GSCN is appropriate.

There is some difference of opinion between the technicians and officers with regard to out-turn of coaches. While a majority of the technicians felt it is not appropriate to consider in the out turn when a coach is repaired beyond 60 days. But the officers and supervisors felt it is appropriate. There are also differences in the opinion of officers and technicians in calculating incentive taking into consideration 0.7 Plant index and 0.3 Plant production index. While the officers agreed for this. A majority of the technicians have not approved it. Similarly, there are differences of opinion between officers and supervisors. The technicians disapproved of the quality linkage factor while the officers approved the quality linkage factors by a majority. So also there is a total disagreement with regard to the group attendance factor. The technicians rejected the group attendance factor by a majority, the officers and supervisory staff agreed for the group attendance factor.

7.19. Opinion of Employees of Lallaguda Workshop on PBR

A good many officers and supervisors expressed that the quality of output under PBR incentive scheme in Lallaguda is satisfactory. The same view was also expressed by the technicians. However, the officers and technicians differed on the issue of penalizing the supervisors for booking idle time. A majority of the officers opposed denying incentive bonus to technicians while on training and they have also felt that denial incentive bonus for the technicians while on training is not motivating them to opt for training. A majority of the officers are against removing ceiling limit of 50% on incentive bonus. They felt that removal of ceiling limit will harm the health of the technicians because they may strain more to earn more. They also felt in the event of removal of ceiling limit on incentive bonus stringent quality controlled measures should be introduced in the PBR. Both the officers and supervisory staff felt the present quality of output under GIS in Lallaguda is good when compared to GIS. Both the sections felt PBR is good for the Indian Railways than GIS and a good majority expressed that workers can earn more under GIS. The technicians expressed that given an opportunity they would like to shift to GIS from PBR.

An overwhelming majority of technicians expressed their unequivocal support for: There are good relations between supervisors and workers under PBR; output under PBR is satisfactory; work culture is good under PBR. They also strongly expressed that the technicians are at mercy of supervisors for categorizing them as DWs and EIWs and they strongly wanted the laborious punching card system should be revised. Technicians also expressed that the present time allowances under PBR are satisfactory; the incentive bonus to EIS is

dependent on DWs. There will be unhealthy competition between technicians to earn more if and when ceiling limit on bonus is removed and they also felt presently technicians are not motivated for training because of loss of incentive while on training and hence they should not have denied bonus while on training. They approved of enquiry into cases of continuous maximum earning of bonus by technicians and also into cases of continuous earning of lowest bonus of less than 33 ¹/₃ %.

VIII. PERCEPTIONS OF EMPLOYEES ON PBR AT LALLAGUDA WORKSHOP

The perceptions of the employees on CLW, also called PBR, at Lallaguda Workshop, Secunderabad have been gathered from two categories of the employees for whom the incentive bonus scheme was designed. Since they are the beneficiaries of the schemes they are the right constituency and their perceptions as recipients are critical for the incentive schemes at large. Hence they are fodder for this study and they are:

(i) Engineering officers, Sr. Section Engineers (SSEs) and Junior Engineers (JEs)

These employees are the field level guides to the technicians who are the foot soldiers of the workshop. Engineering officers are of gazetted rank while SSEs and JEs are also engineers but are non-gazetted. Their qualification is Degree in Engineering. At Lallaguda there are 247 officers, SSEs and JEs and the questionnaire was served to all of them to express their views.

(ii) **Technicians:** There are three levels of technicians, who are workers in real terms, otherwise called Technician Grade I, II and III and if an employee is recruited through RRB he must be an ITI. They are also technicians not recruited through RRB, who are skilled workers either SSC passed or intermediate without a technical qualification. There are 2151 technicians in Lallaguda of whom 500 were served the survey questionnaire at random.

Out of 247 officers and supervisory staff who were served with the questionnaire 102 have responded and out of 500 technicians who were served the questionnaire at random 288 have responded. Thus, 42.5% of the supervisory staff and 57.6% of subordinate technical staff have responded to the survey. This is an indication of the measure of enthusiasm of the technical staff, both officers and subordinates to their incentive bonus scheme.

It is relevant to note that all the employees under survey are lower middle and lower level employees and their perceptions vary according to their status. While a fairly good level of knowledge and understanding of the incentive schemes can be expected from the supervisory officers, the subordinate officers may not be so proficient about incentive schemes of the railways except the monetary benefits they reap through the PBR which yields extra bucks to them. Hence, a sort of subjectivism may be inherent in their responses, which means that they may not like the provisions or changes which compels them to work hard and at times they may not be receiving the incentive bonus amounts according to their expectations because of quality control factors.

8.1. Questionnaire

However, a structured questionnaire was served to both the categories of employees taking enough caution to elicit their genuine opinions. While the supervisory staff was asked 17 questions, the technicians were asked 16 questions while seven questions are common to both. The questionnaire circulated has the following responses for the employees to respond.

- a) Strongly Agree: Means the employee is committed to the view.
- b) Agree: Means the employee is agreeing but is malleable and open to changes.
- c) Strongly disagree: The employee is totally opposed to the view and there is only a little likelihood of altering his view.
- d) Disagree: The employee is not agreeable but is open to change through counselling.
- e) Undecided: The employee has no opinion on the issue raised nor is he willing to share his view. He needs more counselling.

8.2. Analysis of responses from Officers and Supervisors

Views of the officers and supervisors conveyed through their responses are tabulated hereunder.

In all 17 questions were posed to the officers and supervisors of Lallaguda workshop, Secunderabad to elicit their perceptions on PBR incentive scheme being implemented for the employees of the workshop. These questions broadly focused on the following concerns of employee incentive bonus scheme of the workshop:

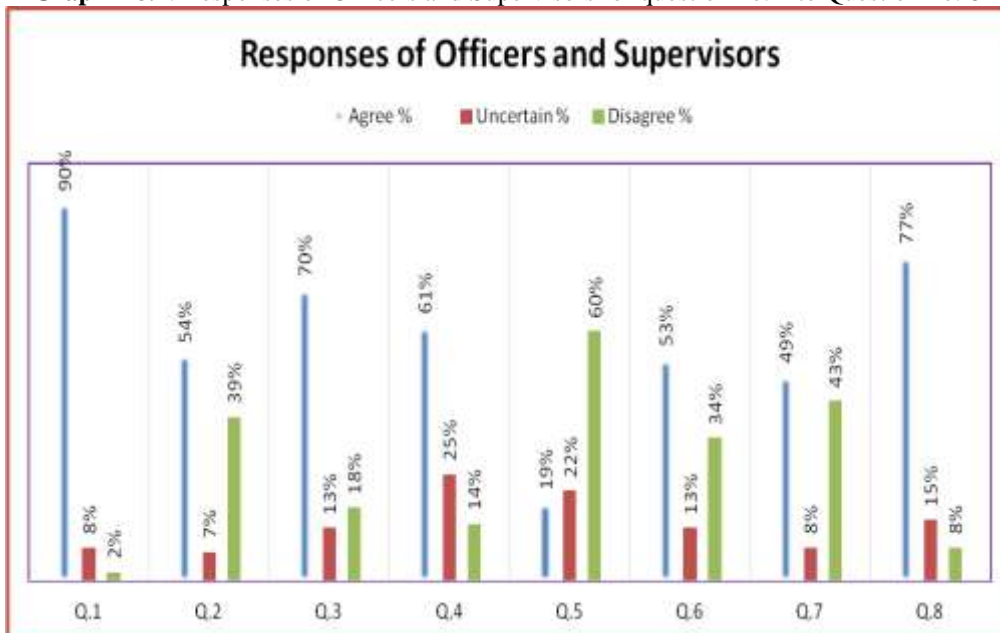
- i. Three questions (Question Nos. 1,14 and15) pertain to the quality aspect of the output which in turn contributes for brand image and consumer satisfaction of the institution.
- ii. Four questions on (Question Nos. 3,4,5 and13) relate to productivity aspects of the workshop which is vital for the survival and financial health of the institution.
- iii. Three questions on (Question Nos. 8,9 and 10) concern the industrial relations prevailing in the workshop which is crucial for a harmonious industrial climate and an enabling atmosphere for the efficient functioning of the institution besides a sense of pride among the employees.

- iv. Seven questions (Question Nos. 2,6,7,11,12,16 and17) on monetary incentive bonus to the employees the purpose of which is to adequately reward the hard working employees and to extract cost effective increased output commensurate with quality standards.

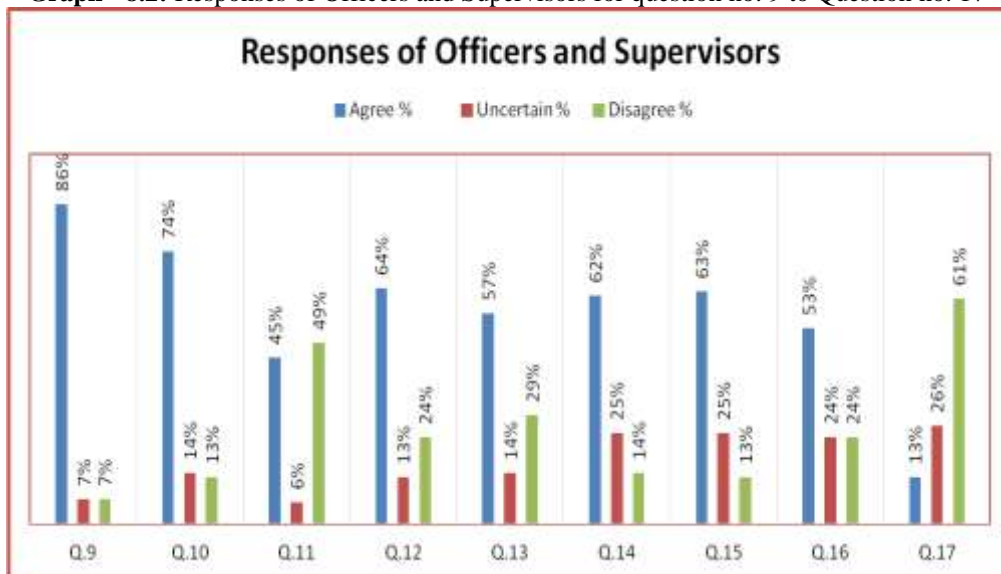
Table - 8.1.: Views of the Officers and Supervisors

Q. No	Question	A (%)	D (%)	U (%)	Total (%)
1	Quality of Output in PBR is satisfactory	90	8	2	100
2	It is appropriate to provide 15% incentive to SSE	54	7	39	100
3	Record keeping of PBR incentive scheme as per Mechanical Code is best	70	13	18	100
4	Production control organization(PCO) is very big when compared to Group Incentive scheme (GIS)	61	25	14	100
5	Supervisors need to be penalized when idle time is booked	19	22	60	100
6	Technicians need not be denied of incentive during training period	53	13	34	100
7	Technicians are not motivated to go for the training because of loss of incentive	49	8	43	100
8	Work culture is good in PBR	77	15	8	100
9	Supervisors to workers relation is good in PBR scheme	86	7	7	100
10	Control of workers is good in PBR scheme	74	14	13	100
11	Max ceiling limit of 50% bonus for technicians need to be removed	45	6	49	100
12	If the maximum ceiling limit of 50% bonus limit is removed, stringent quality parameters need to be incorporated	64	13	24	100
13	Attendance factor as in GIS need to be introduced in PBR also.	57	14	29	100
14	Quality linkage factor as in GIS scheme, needs to be introduced in PBR	62	25	14	100
15	Quality of output is good in PBR when compared to GIS	63	25	13	100
16	PBR scheme is better for Indian Railways when compared to GIS	53	24	24	100
17	Workers can earn more incentive in PBR when compared to GIS	13	26	61	100

Graph – 8.1: Responses of Officers and Supervisors for question no. 1 to Question no. 8



Graph - 8.2: Responses of Officers and Supervisors for question no. 9 to Question no. 17



A good many of the officers and supervisors to the extent of 3/4th of the respondents expressed that the quality of output produced under the PBR incentive scheme in Lallaguda is satisfactory and again 63% of them felt the quality of output is better than the output under GIS incentive scheme. They felt that it is appropriate to give 15% incentive to the supervisors. A good majority to the extent of 70% of the officers are of the opinion that documentation is the best under PBR. A majority of the respondents felt there is very big PCO under PBR. However, a majority of the officers and supervisors disagreed with the view that supervisors should be penalized when idle time is booked for the technicians.

A majority of the respondents to the extent of 53% are against denial of incentive bonus to technicians when deputed on training but only 49% of them felt that denial of incentive is the dissuading factor for the technicians to opt for training.

A good majority of more than 3/4 of the officers and supervisors felt the work culture under PBR is good with only 8% of them dissenting. They also overwhelmingly felt that supervisor and worker relations are very good under PBR and even felt control of workers under PBR is good. Majority to the extent of 49% of the officers and supervisors opposed removing the ceiling limit of 50% on incentive bonus to the workers but a good majority to the extent of 64% wanted that stringent quality control measures should be imposed in the event of lifting the ceiling limit of 50% on incentive bonus to the technicians. The Officers and supervisors to the extent of 62%, wanted the quality control factors under GIS should be introduced in PBR and 57% of them wanted the introduction penalization provision for absenteeism in the PBR as in the GIS. At the same time the majority of the officers and supervisory staff felt the present quality of output under PBR is good in comparison with GIS. A simple majority, to the extent of 53% of the officers and supervisors opined that PBR incentive scheme is good for the Indian Railways than GIS and a majority to the extent of 61% disagreed that workers can earn more incentive in PBR when compared to GIS.

8.3. Technicians on PBR

There are altogether 2151 technicians in Lallaguda workshop. Since it is unwieldy to survey all of them and many may not be even knowledgeable, a sample of 500 of them, roughly 21% of the total, was served with the questionnaire to elicit their opinions. Of the total 500 only 288, comprising of 57.6% answered the questionnaire and recorded their views. Their views as expressed in the survey are analyzed below.

The opinion of the technicians gathered through the structured questionnaire circulated among selected 500 respondents is compiled in the table below.

Overall 16 questions were posed to the technicians soliciting their perceptions on the PBR incentive scheme under implementation in Lallaguda Workshop, Secunderabad. The questions directed at the technicians broadly highlighted the following aspects of incentive bonus scheme and the workshop's support in moving the wheels of the railways in this part of the country:

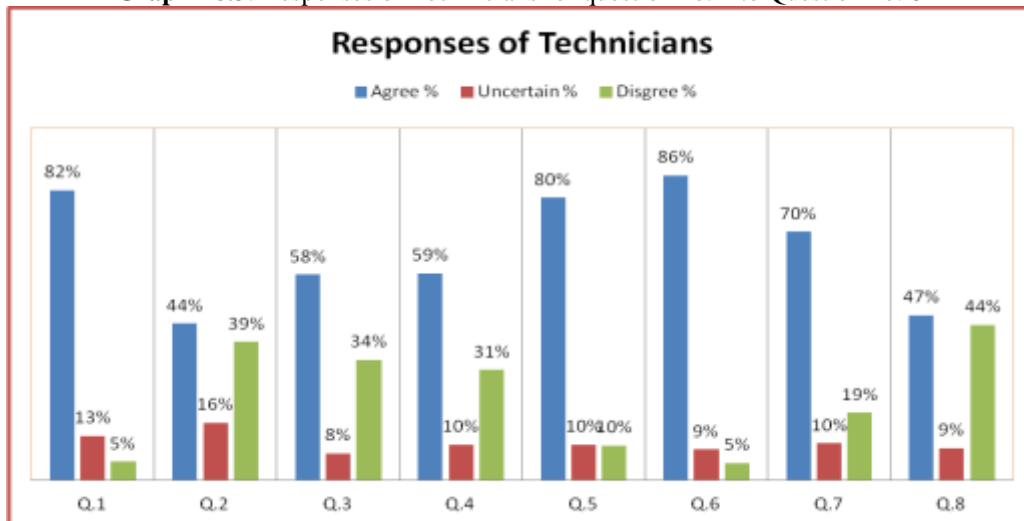
- i. One question (Question No. 1) on quality of output from the workshop which helps in brand building and consumer satisfaction at large.
- ii. Three questions (Question Nos. 2,7 and 13) on productivity which is the basis for the survival of the workshop.

- iii. Two questions (Question Nos. 5 and 6) on industrial relations which provides the ambience for the overall climate of progress and prosperity not only the institution of railways but also the users of this public utility institution.
- iv. Seven questions (Question Nos. 3,4,8,9,10,11,12,14 and 16) on monetary incentive bonus to the employees which aims to motivate the employees to contribute for improved productivity of the railways.

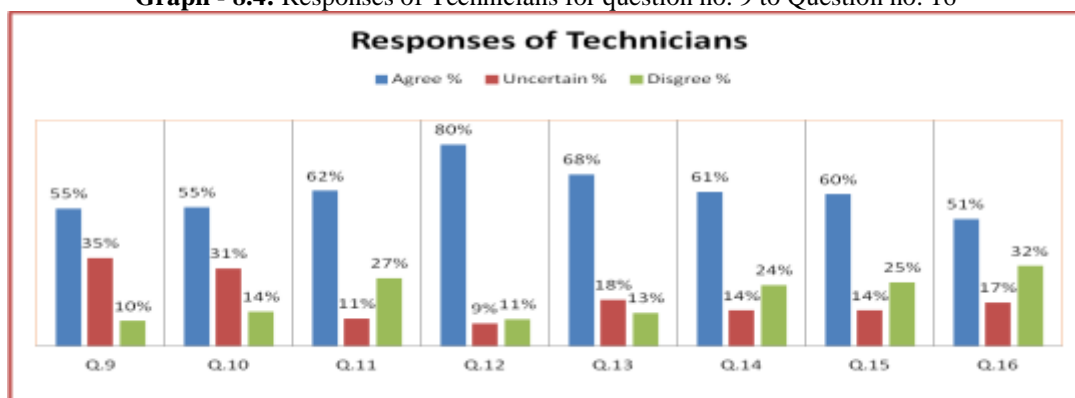
Table – 8.2: Opinions of technicians on various aspects of PBR

Q. NO.	Questions	A (%)	D (%)	U (%)	Total (%)
Q 1	Quality of Output in PBR is satisfactory	82	5	13	100
Q 2	Penalizing Supervisors for idle time booking of technicians is not appropriate.	44	39	16	100
Q 3	Technicians need not be denied of incentive during training period	58	34	8	100
Q 4	Technicians are not motivated to go for the training because of loss of incentive	59	31	10	100
Q 5	Work culture is good in PBR	80	10	10	100
Q 6	Supervisors to workers relation is good in PBR scheme	86	5	9	100
Q 7	The system of punching of job cards is laborious and need to be revised	70	19	10	100
Q 8	Max ceiling limit of 50% bonus for technicians need to be removed	47	44	9	100
Q 9	The practice of conducting investigation when a technician earn more than 50% bonus continuously.	55	10	35	100
Q 10	There is a need to do investigation if a technician is earning less than 331/3% incentive bonus continuously	55	14	31	100
Q 11	The present PBR system of incentive is satisfactory	62	27	11	100
Q 12	In the present system there is no option for the technician to do work as DW or EIW and at the mercy of supervisors.	80	11	9	100
Q 13	The time allowances provided in PBR is satisfactory.	68	13	18	100
Q 14	In the present system incentive of EIW depends on the incentive of DW is appropriate	61	24	14	100
Q 15	In the PBR system, there would be unhealthy competition amongst technicians with respect to incentive	60	25	14	100
Q 16	Provided an opportunity, I would like to shift from PBR to GIS incentive scheme	51	32	17	100

Graph - 8.3: Responses of Technicians for question no. 1 to Question no. 8



Graph - 8.4: Responses of Technicians for question no. 9 to Question no. 16



A detailed examination of the above table reveals the following pattern in the opinions of the technicians

1) An overwhelming majority view of 70% and above on an aspect of PBR: The technicians expressed their unequivocal opinion with a thumping majority on the following aspects:

- i) There are good relations between Supervisors – Worker under PBR.
- ii) There is satisfactory quality of output under PBR
- iii) There is a good work culture under PBR
- iv) The technicians are at the mercy of supervisors who decide them as DWs and EIWs.
- v) The laborious punching card system should be revised.

2) A good majority of opinions expressed by 55 to 69 % of respondents on an aspect of PBR:

The technicians expressed their majority view on the following aspects of PBR.

- i) The present time allowances under PBR are satisfactory.
- ii) The incentive bonus to EIS though at present is dependent on DWs bonus is appropriate.
- iii) There will be unhealthy competition among technicians under PBR with regard to bonus earnings.
- iv) Technicians are not motivated for training because of loss of incentive bonus while on training.
- v) Hence, Technicians need not be denied bonus while on training.
- vi) It is okay to conduct enquiry in cases of technicians who earn maximum bonus continuously.
- vii) It is equally appropriate to investigate technicians who continuously earn less than minimum bonus of $33\frac{1}{3}\%$.

3) Responses from technicians which constitute 50% and less on certain aspects of PBR:

- i) If an opportunity is provided a simple majority of 51% of the respondents would like to quit the PBR incentive system to join the GIS.
- ii) The ceiling of 50% on incentive bonus should be removed and
- iii) It is not appropriate to penalize supervisors for booking idle time.

8.4. Perceptions on common queries

In the questionnaire circulated to the officers and supervisors and the technicians there are seven common questions and their views on these questions are tabulated below.

Table – 8.3: Responses of supervisors and technicians on common questions on PBR

Q. No.	Question	Supervisors (102)			Technicians (288)		
		A (%)	D (%)	U (%)	A (%)	D (%)	U (%)
1	Quality under PBR is satisfactory	90	2	8	82	5	13
2	Penalizing supervisors for booking idle time inappropriate	19	60	22	44	39	16
3	Technicians on training need not be denied incentive	53	34	13	58	34	8
4	No incentive on training is dissuading technicians from training	49	43	8	59	31	10
5	PBR work culture is good	77	8	15	80	10	10
6	Supervisors – workers relations good in PBR	86	7	7	86	5	9
7	Ceiling limit of 50% on incentive bonus should be removed	64	24	13	47	44	9

A- Agree; DA- Dis Agree; U- Uncertain

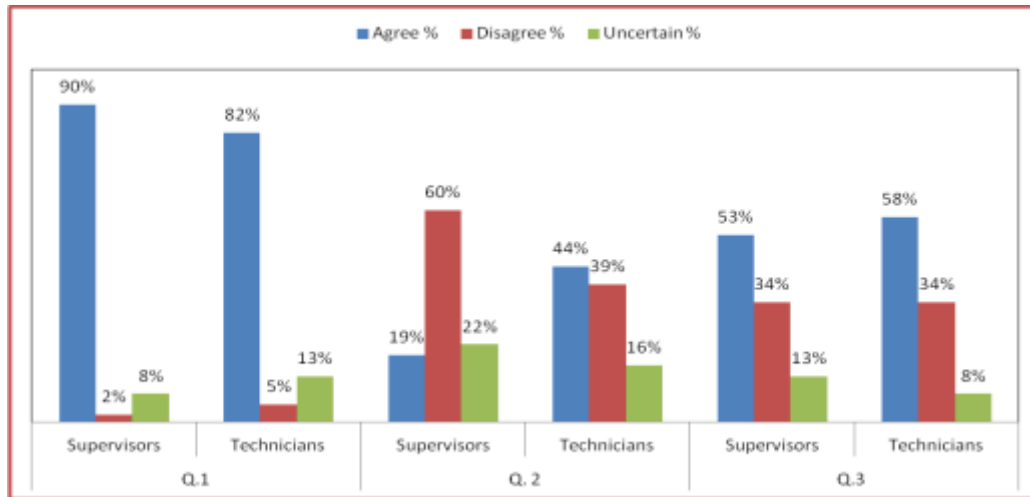
From the above table it can be inferred that an overwhelming majority of over 80% and above among the officers, supervisors and technicians of Lallaguda workshop covered under the PBR incentive scheme who expressed their sharply focused concurrence on the following aspects of PBR.

- 1) Quality of output under PBR is good: Among officers and supervisors 90% supported the view while 82% of the respondents from technicians supported the statement.
- 2) There exists good work culture under PBR: Among the officers and supervisors 77% supported while 80% of the respondents from techies supported the view.
- 3) Supervisor to worker relations under PBR are good: From officers 86% of respondents supported that there are good relations between both the sections and the same 86% of respondents from technicians reiterated the view.

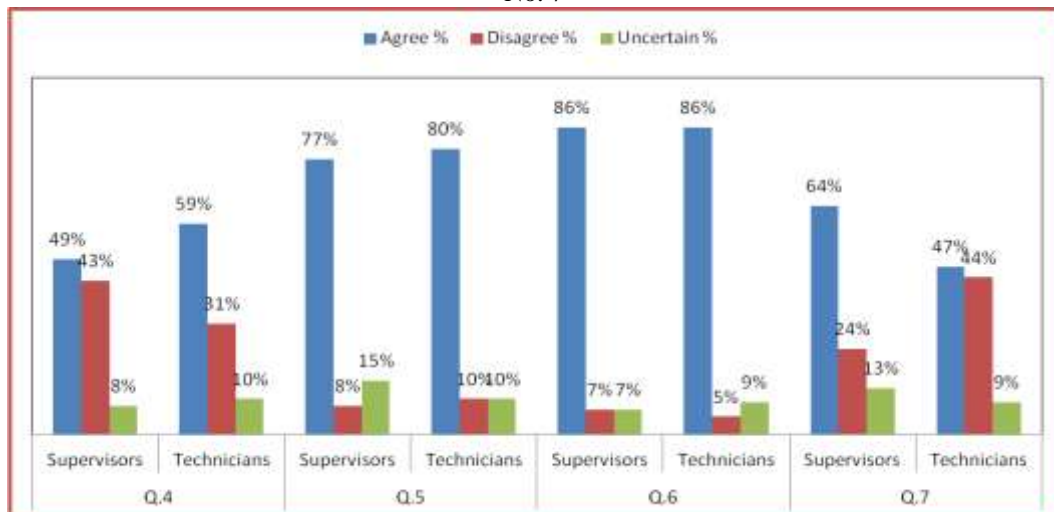
There is absolute majority of opinion among officers and supervisors and technicians on the following two aspects of PBR.

1. There is no need to deny incentive bonus to technicians when they are deputed for training: Among officers and supervisors 53% supported the view while 58% of respondents from technicians supported the statement.
2. Denial of incentive to the technicians on training is dissuading the technicians to go for training which is essential to upgrade their skills: Among officers and supervisors 53% supported the view while 58% of respondents from technicians supported.

Graph - 8.5: Combined Responses of Supervisors and Technicians for Common Question No. 1 to Question No 3



Graph - 8.6: Combined Responses of Supervisors and Technicians for Common Question No. 4 to Question No. 7



A near majority opinion exists between officers, supervisors and technicians on the following two aspects of PBR:

1) It is not appropriate to penalize the supervisors when idle time is booked for technicians: From among officers and supervisors 60% supported the view while 44% of respondents from technicians supported the statement.

2) The ceiling limit of 50% on incentive bonus earnings should be removed: From the officers and supervisors 49% supported while 47% of respondents from among techies wanted the removal of 59% ceiling limit on incentive bonus earnings.

IX. PERCEPTIONS OF EMPLOYEES ON GIS AT CRW, TIRUPATI

The perceptions of the employees on Group Incentive Scheme (GIS), at Carriage Repair Workshop (CRW), Tirupati have been gathered from two categories of the employees for whom the incentive bonus scheme was designed. Since they are the beneficiaries of the schemes they are the right constituency and their perceptions as recipients are critical for the incentive schemes at large. Hence they are fodder for this study.

Engineering officers, Sr. Section Engineers (SSEs) and Junior Engineers (JEs)

These employees are the field level supervisors and guides to the technicians who are the foot soldiers of the workshop. Engineering officers are of gazetted rank while SSEs and JEs are also engineers but are non-gazetted. Their qualification is Degree in Engineering. At Tirupati there are 99 Officers, SSEs and JEs and the questionnaire was served to all of them to express their views.

Technicians: There are three levels of technicians, who are workers in real terms, otherwise called Technician Grade I, Grade II and Grade III and if an employee is recruited through RRB he must be an ITI. There are also technicians not recruited through RRB, who are skilled workers either SSC passed or intermediate without a technical qualification. There are 958 technicians in Tirupati workshop of which 400 were served the survey questionnaire at random.

Out of 99 officers and supervisory staff who were served with the questionnaire 92 have responded and out of 400 technicians who were served the questionnaire at random, 243 have responded which is 93% of the supervisory staff and 60.75% of subordinate technical staff. Overall 93% of the officers and supervisory staff and 25.36% of the total technical staff have been involved in this survey. This is an indication of the measure of enthusiasm evinced by the officers and subordinates and technical staff in the survey. It is relevant to note that all the employees under survey are lower middle and lower level employees and their perceptions vary according to their status.

While a fairly good level of knowledge and understanding of the incentive schemes can be expected from the supervisory officers, the subordinate officers may not be so proficient about incentive schemes except the monetary benefits they reap through the GIS which yields extra bucks to them. Hence a sort of subjectivism may be inherent in their responses, which means that they may not like the provisions or changes which compel them to work hard and at times there may be curbs in their incentive because of quality control factors about which they might be having a grouse.

9.1. Analysis of responses from Officers and Supervisors (GIS)

The responses of the officers and supervisors are analyzed hereunder. The following table presents the views of officers and supervisors to various questions.

To elicit the perceptions on GIS the officers and supervisors of CRW, Tirupati were asked 20 questions on the scheme. The 20 questions directed towards them pertain to the following various broad aspects of incentive bonus scheme for the employees of the railway workshop:

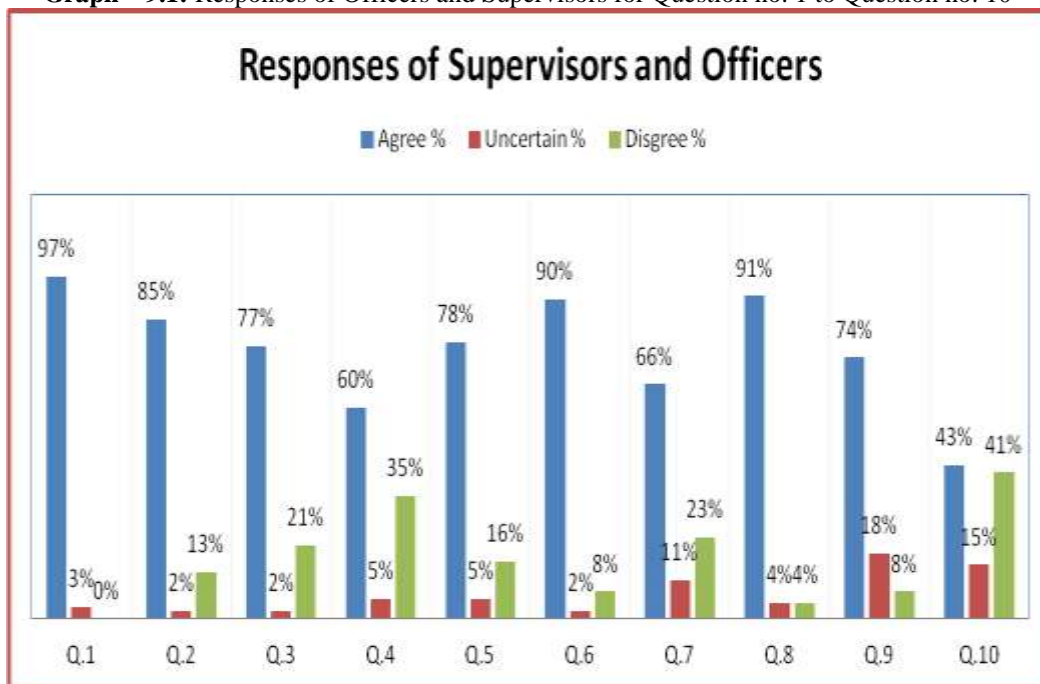
- i. Five questions (Question Nos. 1,7,12,15 and 19) on quality of output which makes the brand image and provides substantial consumer satisfaction.
- ii. Four questions (Question Nos. 11,16,17 and 18) on productivity which builds a sound and viable organization.
- iii. Six questions (Question Nos. 3,4,8,9,10 and 14) are in the domain of industrial relations which is essential for establishing a vibrant and harmonious atmosphere within the institution besides serving as a role model for other enterprises.
- iv. Five questions (Question Nos. 2,5,6,13 and 20) on monetary incentive to the employees which seeks to reward the workers for their contribution to the cost effective increased output of the workshop.

Table - 9.1: Percentage of responses of officers and supervisors to various questions(A- Agree, D- Disagree, U- Uncertain)

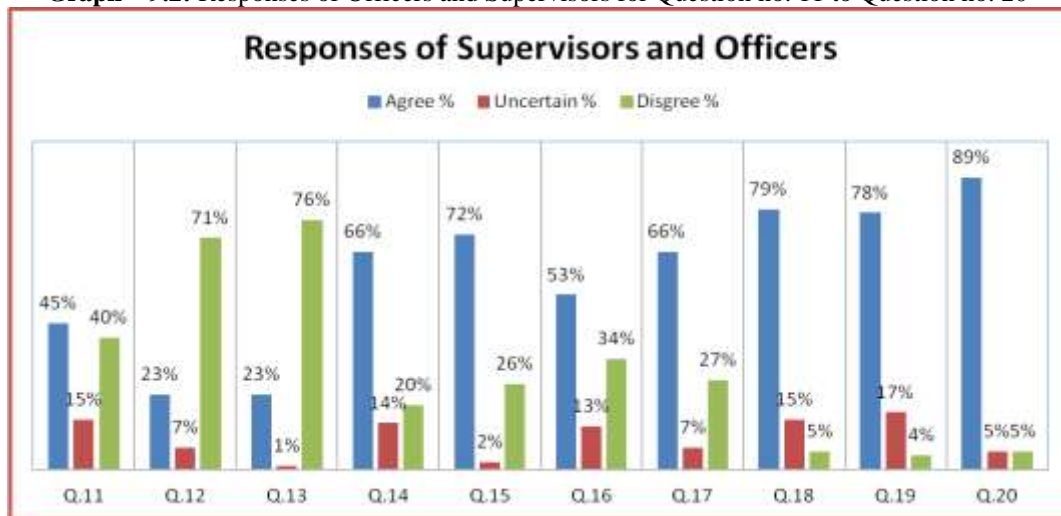
Q. No.	Questions	A %	D %	U %
1	Quality of Output in GIS is satisfactory	97	0	3
2	It is not appropriate to prescribe 15% Incentive bonus limit to SSE	85	13	2

3	In GIS, mostly self-inspection responsibility lies with workmen and supervisors.	77	21	2
4	Group attendance factor in the present system is appropriate	60	35	5
5	Technicians need not be denied of incentive during training period	78	16	5
6	Technicians are not motivated to go for the training due to of loss of incentive	90	8	2
7	Quality linkage factor in the present system is appropriate	66	23	11
8	Work culture in GIS is satisfactory	92	4	4
9	Supervisors to workers relation is good in GIS scheme	74	8	18
10	Control Over technicians is good in GIS scheme when compared to PBR	43	41	15
11	Idle time limit of one hour in the present system is appropriate	45	40	15
12	Reduction due to rework in the present system is appropriate	23	71	7
13	The system of ceiling limit of 50% on bonus is appropriate	23	76	1
14	No ceiling limit on bonus, technicians take strain to earn more may affect their health	66	20	14
15	The concept of equated eGSCN is appropriate	72	26	2
16	The present system of coach not being considered on account of repairs beyond 90 days is appropriate	53	34	13
17	The incentive calculation of 0.7 PI and 0.3 PPI is appropriate	66	27	7
18	GIS is good for Railway, workers and customers at large, when compared to PBR	79	5	15
19	Quality of output is good in GIS when compared to PBR*	78	4	17
20	Workers can earn more incentive in GIS when compared to PBR	89	5	5

Graph – 9.1: Responses of Officers and Supervisors for Question no. 1 to Question no. 10



Graph – 9.2: Responses of Officers and Supervisors for Question no. 11 to Question no. 20



A look at the above table reveals the following interesting insights.

1) Opinions with over 90%: In respect of the following issues the officers and supervisors responded with an overwhelming opinion of over 90%.

- An overwhelming percentage of 97% of the officers and supervisors asserted that the quality of output under GIS is satisfactory.
- Over 91% of the respondents asserted that the work culture under GIS is good.
- Over 90% of the respondents opined that the technicians are not motivated to go for training since they would lose incentive bonus while on training.

2) Opinions with 80-89% responses

With regard to the following issues 80 to 89% of the total respondent officers and supervisors expressed their opinions.

- An overwhelming 89% of the officers and supervisors opined that under GIS the technicians can earn more incentive when compared to PBR.
- An overwhelming 85% of the respondents expressed that it is not appropriate to impose 15% ceiling limit on bonus to the Senior Section Engineers.
- Around 79% of the respondents opined that GIS is good for the Railways, workers and customers at large when compared to PBR.

3) Responses in the range of 70-79%

- Around 78% of the respondents expressed that the quality of output under GIS is good when compared to PBR.
- 78% of the respondents felt technicians need not be denied incentive bonus while on training.
- 77% of the respondents opined that GIS is mostly self-inspection and there is more responsibility on the supervisors and workers which is appropriate.
- 76% of the respondents disagreed with the assertion that the present system of ceiling limit of 50% on bonus to techies is appropriate.
- 74% of the respondents felt the relations between supervisors and workers are good under GIS.
- 72% of the respondents felt the concept of equated GSCN is appropriate.
- It is not appropriate to reduce incentive of technicians for rework. A clear majority of 71% of the respondents expressed strong disagreement

4) Responses in the range of 60-69%

- 66% of the respondents expressed that quality linkage factor under GIS is appropriate.
- 66% of the respondents expressed that if there is no ceiling on incentive earnings, the technicians will strain to earn more which may affect their health.
- 66% of respondents opined that the incentive calculation of 0.7 plant index and 0.3 plant product index in the present system is appropriate.
- 60% of the respondents felt that group attendance factor under GIS is appropriate.

5) Responses in the range of 40 to 59

The following percentages of respondents among officers and supervisors expressed their views on various aspects of GIS in the range of 40 to 59%.

- 53% of officers and supervisors expressed that the present system of a coach not being considered on account of repairs beyond 90 days is appropriate.

- (b) 45% of the respondents felt booking of idle time only when there is power failure for more than one hour is appropriate.
- (c) 43% of respondents expressed that control over technicians is good in GIS when compared to PBR.

9.2. Perception of Technicians on GIS

The opinion of the technicians gathered through the structured questionnaire circulated among selected respondents is compiled in the table below.

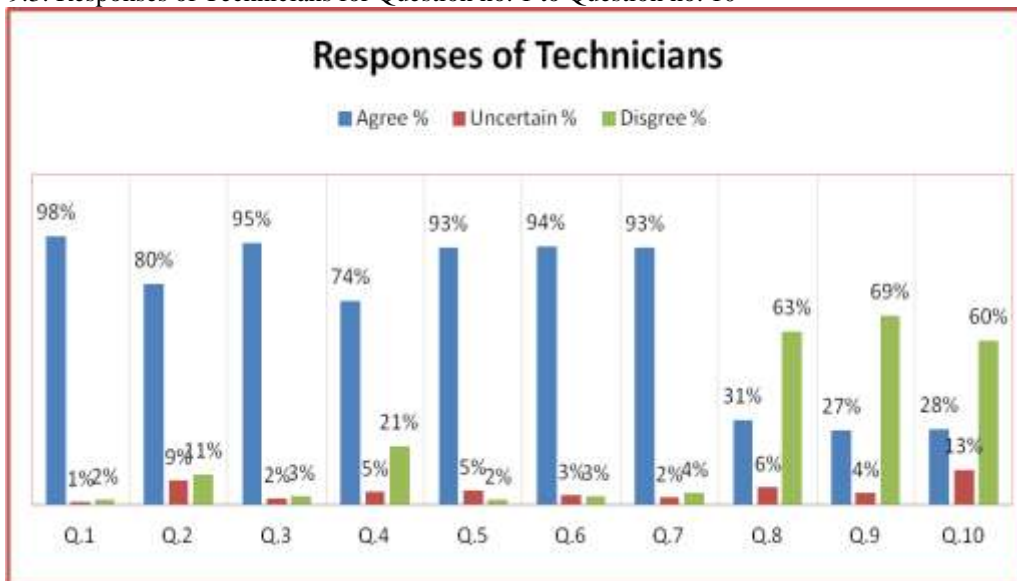
Altogether 20 questions were posed to the technicians of CRW, Tirupati on various aspects of GIS. The questions were framed so as to elicit the perceptions of the technicians on the following broad areas of the incentive scheme under implementation.

- i. Five questions (Question Nos. 1,9,12,13 and 19) which is the pathway in building brand image and in turn helps attain consumer satisfaction.
- ii. Three questions (Question Nos. 1,8, and 16) on productivity which leads to profitability and strengthens the financial health of the institution.
- iii. Four questions (Question Nos. 5,6,7 and 15) on industrial relations which contributes to usher in harmonious industrial environment and infuses better work culture among the employees.
- iv. Eight questions (Question Nos. 3,4,10,11,14,17,18 and 20) on the monetary incentive bonus scheme to the employees which is intended to reward the employees for their hard work in contributing for the increased production of the workshop.

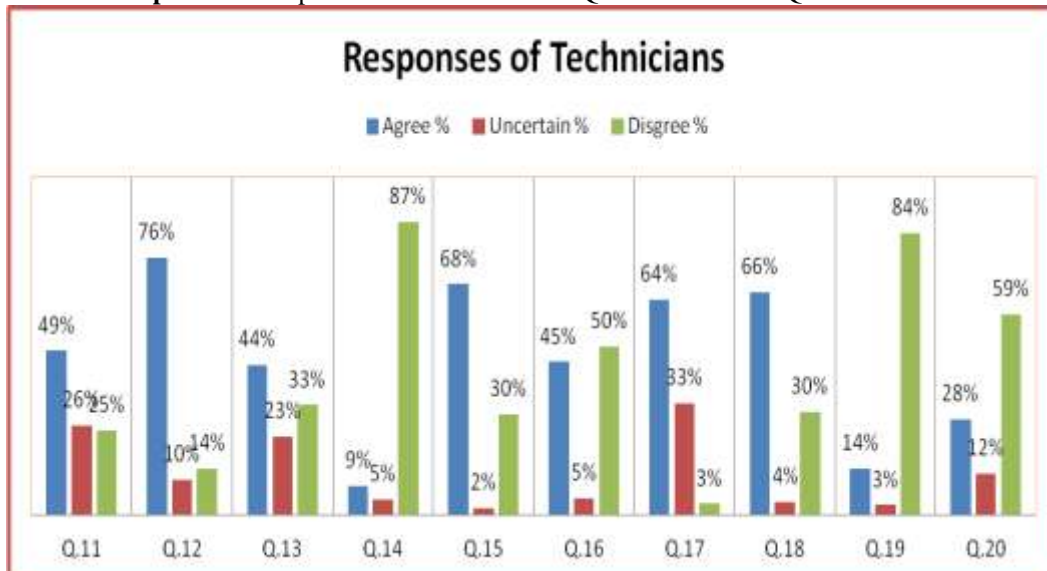
Table - 9.2: Percentage of responses of Technicians to various questions(A- Agreee, D- Disagree,U- Uncertain)

S. No.	Question	A (%)	D (%)	U (%)
1	Output quality in GIS is satisfactory	97	2	1
2	Idle time limit of one hour	80	11	9
3	Techies on training need not be denied of incentive	95	3	2
4	Technicians are not motivated to go for the training because of loss of incentive	74	21	5
5	Work culture is good in GIS	93	2	5
6	Supervisors to workers relation is good in GIS scheme	94	3	3
7	Under GIS mostly self-inspection.	94	4	2
8	Group attendance factor in the present system is appropriate	31	63	6
9	Quality linkage factor is appropriate.	27	69	4
10	The incentive calculation of 0.7 PI and 0.3 PPI is appropriate	27	60	13
11	The present GIS system of incentive is satisfactory	49	25	26
12	The concept of equated EGSCN is appropriate	76	14	10
13	The time allowance provided in GIS is satisfactory	45	32	23
14	Ceiling limit of 50% on bonus is appropriate	8	87	5
15	No ceiling on bonus, technicians strain more which may affect their health	68	30	2
16	The present system of coach not being considered in outturn which stays beyond 90 days in shop is appropriate	45	50	5
17	GIS scheme is better for IR, when compared to PBR	64	4	32
18	GIS scheme is better for workmen when compared to PBR	66	30	4
19	Reduction of incentive on account of rework in the present system is appropriate	13	84	3
20	Provided an opportunity, I would like to shift from GIS to PBR.	29	59	12

Graph – 9.3: Responses of Technicians for Question no. 1 to Question no. 10



Graph – 9.4: Responses of Technicians for Question no. 11 to Question no. 20



An examination of the table 9.2 revealed the following striking responses of the technicians.

1) **Above 90% responses:** An overwhelming 93% to 98% of the technicians expressed that:

- The quality of output under GIS is satisfactory.
- No need to deny bonus to technicians while on training
- There are good supervisor-worker relations under GIS.
- Work culture under GIS is good
- It is okay to have self-inspection under GIS and willing to shoulder responsibility.

2) **Above 75% to 89%:** A good majority of technicians expressed the view that

- It is not appropriate to impose a ceiling limit of 50% on incentive bonus under GIS.
- It is not appropriate to reduce incentive of technicians for rework. A clear majority of the overall respondents expressed strong disagreement.
- The technicians agreed for booking idle time only when power failure exceeds one hour.
- The technicians felt the concept eGSCN is appropriate.

3) **Above 44% to 74%:** A good many of the technicians expressed the following majority view on various aspects of GIS:

- Loss of incentive while on training is discouraging the technicians to go for training is the reason expressed by them for not opting for training.

- At present the quality linkage factor under GIS is NOT appropriate is the view of technicians
- Technicians may strain more which may affect their health if there is no ceiling limit on bonus
- GIS is better for workers when compared to PBR GIS is better for Indian Railways when compared to PBR. Group attendance factor in GIS at present is NOT appropriate
- The incentive calculation of 0.7 plant index and 0.3 plant production index is NOT appropriate.
- The technicians are NOT willing to shift from GIS to PBR even if an opportunity is provided. The present system of a coach not being considered in outturn when it stays beyond 90 days in the shop is NOT appropriate.
- The present system of GIS is satisfactory
- Time allowances under GIS are satisfactory

9.3. Perceptions of Officers, Supervisors and Technicians on common questions

In the questionnaires circulated to the officers and supervisors and the technicians there are 15 common questions and their views on these questions are tabulated in table 10.6 below. An examination of the responses of the Officers, supervisors and technicians on common issues involved in GIS which were posed in the questionnaires for both of them reveal certain interesting views of the beneficiaries of GIS. Overall it appears the employees of CRW, Tirupati have better understanding of the complicated GIS. The combined perceptions and their agreement as well as disagreements are as follows.

Table – 9.3: Perceptions on common questions

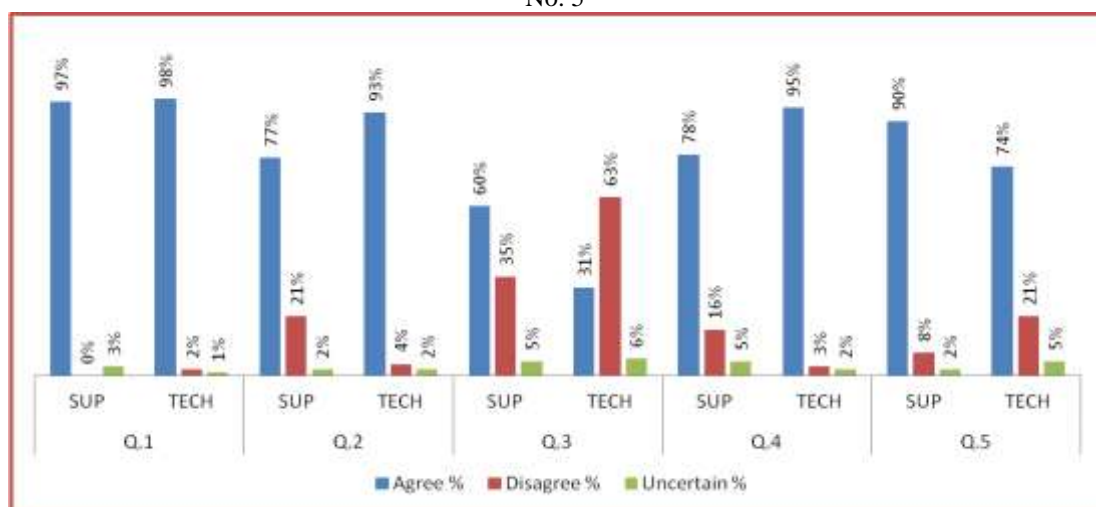
S.No.	Question	Category	A(%)	DA(%)	U(%)
1	Quality of output satisfactory	Supervisor	97	0	3
		Technicians	98	2	1
2	Self-Inspection	Supervisor	77	21	2
		Technicians	93	4	6
3	GAF	Supervisor	60	35	5
		Technicians	31	63	6
4	Technicians need not be denied of incentive during training	Supervisor	78	16	5
		Technicians	95	3	2
5	Technicians should not levied work on training	Supervisor	90	8	2
		Technicians	74	21	11
6	Quality linkage factor	Supervisor	66	23	11
		Technicians	27	69	10
7	Work culture good under GIS	Supervisor	91	4	4
		Technicians	93	2	5
8	Supervisor workers relations good under GIS	Supervisor	74	8	18
		Technicians	94	3	3
9	Idle time of one hour	Supervisor	45	40	15
		Technicians	80	1	9
10	Reduction of incentive due to rework	Supervisor	23	71	7
		Technicians	14	84	3
11	Ceiling limit of 50% on bonus	Supervisor	23	76	1
		Technicians	9	87	5
12	No ceiling limit on bonus lead to extra strain of technicians	Supervisor	66	20	14
		Technicians	68	30	2
13	Concept of GSCN	Supervisor	72	26	2
		Technicians	76	14	10
14	Coach not being considered in outturn if exceeds ninety days in shop	Supervisor	53	34	13
		Technicians	45	50	5
15	Incentive calculation of 0.7 plant index and 0.3 % plant production index	Supervisor	66	27	7
		Technicians	28	60	13

A- Agree, DA- Disagree; U- Uncertain

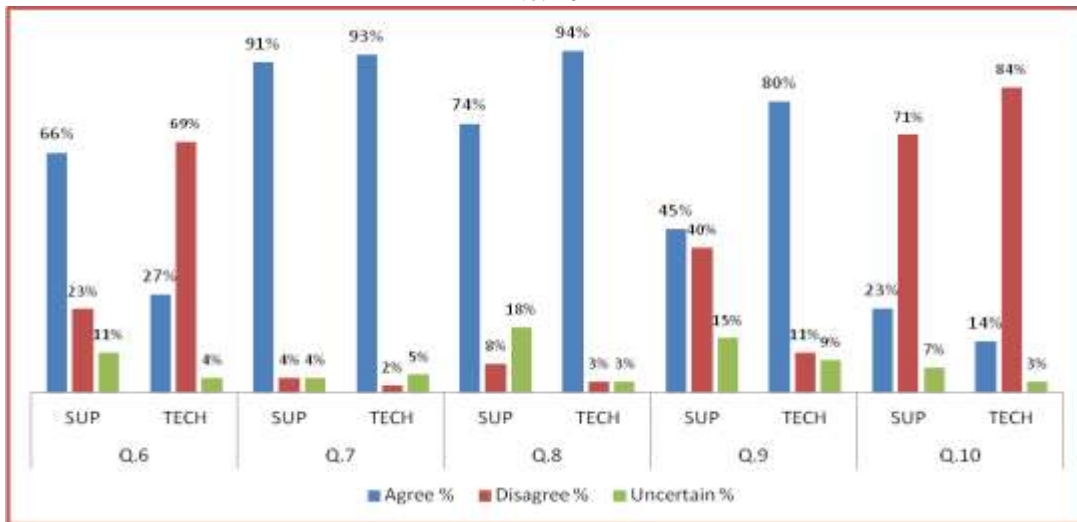
- 1) An overwhelming 97% each of the supervisors and technicians expressed that quality of output under GIS is satisfactory. This is a near unanimous opinion of the CRW, Tirupati employees.
- 2) Similarly, there is a strong assertion to the extent of 91% of officers, supervisors and 93% of technicians that work culture is good under GIS. The technicians are more emphatic than the supervisory staff in this.
- 3) The officers and supervisors with 78% and technicians with 95% are emphatic in responding that technicians need not be denied incentive bonus while on training. The technicians were near unanimous to the extent of 95% in voicing their opinion that they should not be denied incentive while on training. This is a complicated proposition since GIS is productivity linked bonus and every rupee earned should be matched by improvement in productivity. However, Railways can consider a compensatory allowance for those on training.
- 4) Both the officers and supervisors at 77% and technicians with 93% emphatically claimed that under GIS it is mostly self-inspection and responsibility of monitoring lies both with the supervisors and workmen and it is okay for all of them.

- 5) The officers and supervisors and technicians have asserted that under GIS the relations between supervisors and technicians is good. In this regard, the technicians are more emphatic since 94% of respondents claimed good relations between them and supervisors while 74% supervisors claimed good relations with technicians.
- 6) While a good combined majority of both stated that the technicians are not motivated for training because of loss of incentive while on training, the officers and supervisors expressed this opinion to the extent of 90% of their total responses while 74% technicians endorsed.
- 7) Both the officers and supervisors and technicians differed with the statement that the present system of ceiling limit of 50% on bonus is appropriate. While the 87% of the technicians emphasized their opposition to the ceiling limit, 76% of the officers expressed their opposition.
- 8) Both the officers and supervisors and technicians disagreed with the view that reduction of incentive on account of rework is appropriate. The technicians are more emphatic since 84% of them disagreed while the officers and supervisors disagreed to the extent of 71% of their responses.
- 9) The officers and supervisors and technicians agreed that the concept of eGSCN is appropriate. While 76% of the technicians expressed their concurrence, 72% of the supervisors conveyed their approval.
- 10) Both the supervisors and technicians are of the opinion that if there is no ceiling limit on incentive bonus, technicians will strain to earn more which will affect their health. Overall all 67% of both the supervisors and technicians combined expressed this view while 66% of the officers and supervisors' respondents and 68% of the technician respondents expressed the same view.
- 11) The technicians and officers and supervisors both agreed that booking idle time only when there is power failure for more than one hour is appropriate. The technicians agreed overwhelmingly to the extent of 80% of the respondents while only 45% of the officers and supervisors agreed with the statement.
- 12) **Difference of opinion:** A majority of the respondents agreed that it is appropriate not to count for outturn a coach which was not repaired beyond 90 days. Hence there is a difference in the opinions expressed by the officers and technicians. While 53% of the officers and supervisors responded that it is appropriate, 50% of the respondents among technicians differed with the statement.
- 13) Like in the case of the above there are differences in the opinions expressed by officers and supervisors and technicians on their responses for the statement that the incentive calculation of 0.7 plant index and 0.3 plant production index in the GIS is appropriate. Within the technicians, a majority to the extent of 60% disagreed with the statement while among the officers a majority to the extent of 66% agreed.
- 14) Similar is the case with regard to quality linkage factor in GIS. To the statement that quality linkage factor in GIS is appropriate 66% of the officers agreed with the statement but 69% of the technicians disagreed and disapproved the quality linkage factor (QLF).
- 15) There is a total disagreement between the supervisors and technicians with regard to group attendance factor (GAF). The officers and supervisors responded that the group GAF is appropriate but a good majority of 63% of the technicians disagreed.

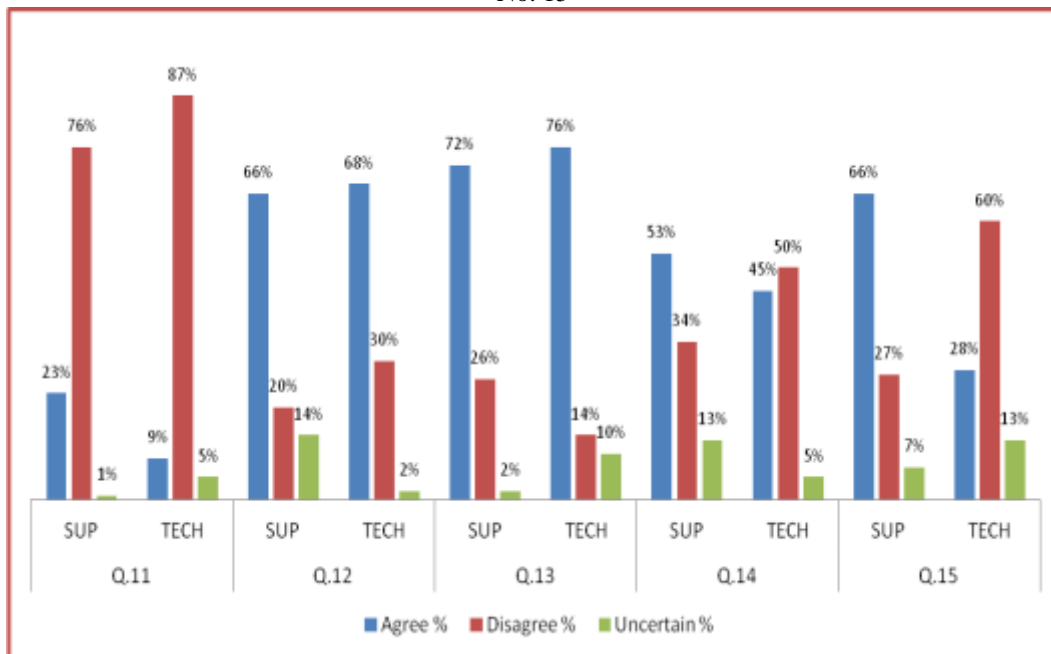
Graph - 9.5: Combined Responses of Supervisors and Technicians for Common Question No. 1 to Question No. 5



Graph - 9.6: Combined Responses of Supervisors and Technicians for Common Question No. 6 to Question No. 10



Graph - 9.7: Combined Responses of Supervisors and Technicians for Common Question No. 11 to Question No. 15



X. COMPARATIVE ANALYSIS OF SECONDARY AND PRIMARY DATA ON PBR AND GIS

From the foregoing analysis of secondary and primary datum the following conclusions can be arrived at and some suggestions made can be considered by the Railway Administration to fine tune the incentive bonus scheme of Railway workshops.

10.1. Findings on PBR from secondary data

From the secondary data on PBR the following conclusions and recommendations can be made:

1. PBR is a very successful incentive scheme under implementation in the Indian Railways. The employees prefer to avail the benefits of individual incentive scheme because that would fetch them reward in terms of money.
2. There is no quality linkage factor, reduction of incentive for rework in PBR scheme, There should be penalization for bad quality and for rework. This would force the employee to improve the quality of his work and reduce rework.
3. Inordinate delays in carriage repairs exceeding 90 days should be discouraged. Since there is no penalization for inordinate delays there is laxity in attending to some carriages which require much labour and work. Therefore, when a carriage is held up for longer days there should be penalization.

4. Documentation work is aplenty in the implementation of the scheme. Considering its liberal approach, it may be needed but over dose of documentation should be restricted.
5. Training which is an important component in up-gradation of skill is not getting encouragement, because an employee deputed for training has to forego bonus. There should be motivation as well as mandatory rules to upgrade the skills of the employees through training.

10.2. PBR – Primary Data

From the survey conducted among the officers, supervisory staff and technicians working in Lallaguda Workshop, Secunderabad on the implementation of the PBR scheme the following findings can be arrived at and certain suggestions made by the employees are also incorporated hereunder:

1. Both the officers, supervisory staff and technicians are of the opinion that the quality of output under PBR is good and they also felt a good work culture is existing in the work shop under the PBR scheme.
2. They also expressed that there are good worker-supervisor relations in the workshop. Both the officers and the technicians felt there is no need to deny incentive bonus to technicians on training and this denial of incentive on training is dissuading the technicians to opt for training.
3. A majority of the opinion is that it is not appropriate to penalize the supervisors for booking idle time for the workers. Another major view that emerged is the ceiling limit of 50% on incentive bonus should be removed.
4. However, the officers felt if and when the ceiling limit is removed there should be stringent quality control factors in the PBR also.
5. They also wanted the penalization for attendance provision applicable for GIS should be incorporated in PBR also.
6. But the officers and supervisors are not in favour of removing the ceiling limit under PBR in the present scenario of absence of quality control and attendance factors.
7. Both the officers and supervisors as well as technicians felt PBR incentive scheme is good for the Railways than the GIS.
8. But a majority of workers are ready to quit the PBR if they are provided with an opportunity to join the GIS.
9. An overwhelming majority of the technicians felt that they are at mercy of supervisors who decide amongst them as direct workers and essentially indirect workers for various jobs.
10. The technicians also expressed that under the PBR scheme the incentive to EIWs is dependent on the incentive paid to DWs.
11. They also felt the present PBR will lead to unhealthy competition among technicians with regard to earning of bonus.
12. A majority of them mentioned loss of incentive as the main factor discouraging them to go for training since they felt technicians need not be denied bonus while on training.
13. The technicians approved the present system of enquiry in to the cases of their colleagues earning maximum bonus continuously.
14. They also approved of the present system of investigating technician who are continuously earning less than the minimum bonus of 33 1/3%.
15. Similarly, an overwhelming majority wanted the present laborious job card punching system should be revised.

10.3. GIS – Secondary Data

From the secondary data on GIS under implementation at CRW, Tirupati some very useful conclusions can be made and the recommendations made hereunder along with the conclusions will help make this scheme more effective, more useful to the organization and more beneficial to the employees.

1. Overall the employees of Carriage workshop Tirupati are happy with the incentive scheme and many of them utilizing the benefit of extra earning which is supported by the fact that the incentive bill for 2017 is around Rs 6 Crores.
2. GIS is a win-win programme. It is benefitting the employees by way of additional income. For the railways also it is useful because this turnover is more with less supervision and lesser documentation. The monitoring can be made easy with GIS.
3. The employees are working hard due to GIS which is supported by the fact that there is no idle time booked.
4. The output is increased because the cycle time of holding the coach in the workshop has come down by nearly 50%.
5. The quality of work also has gone up with decrease in number of repaired coaches subjected to rework and failure below 100 days has come down drastically.

6. There is urgent need to remove the ceiling limit of 50% on maximum incentive bonus because employees want to work more and earn more.
7. It is suggested that the ceiling limit of 15% incentive bonus to supervisors may be removed so as to enthuse them about the work and the scheme. That would motivate them to involve themselves on equal footing with the employees who are earning up to 50% bonus.
8. It is ideal to remove all ceiling limits in the GIS because it is economical to the management and also it would be fetching to the employees.
9. Self-supervision is the hallmark of GIS. The responsibility of completing the task in time, maintaining quality and ensuring attendance rests on the group.

10.4. GIS Primary Data

From the primary data gathered at CRW, Tirupati the following findings and suggestions are made:

1. All the employees of Tirupati workshop are proud about the quality of output.
2. There are good relations between supervisors and workmen and also good work culture in GIS.
3. They wanted the ceiling limit of 50% on bonus should be removed.
4. However, both felt removing ceiling limit on bonus may harm the health of the technicians since they may strain more to earn more and more incentive.
5. Technicians need not be denied incentive while on training since it is not motivating them to opt for training.
6. Supervisors and technicians agreed for booking idle time only when there is power failure for more than one hour.
7. The technicians did not agree for the present system of a coach not considered for out turn when repaired after 90 days. But the officers approved the provision.
8. The technicians disagree with the present provision of 0.7 Plant index and 0.3 Plant production index while calculating incentive but the officers and supervisors approved the provision.
9. The technicians are against the present quality linkage factor but the officers approved the same.
10. The technicians expressed against the present provision of group attendance factor but the officers and supervisors have approved it.
11. Both the officers and technicians felt GIS is better for workers when compared to PBR.
12. Both the sections felt GIS is good for the Railways.

XI. CONCLUSION

This study has so far examined the twin hypothesis of Marriott and Henderson on the incentive schemes in the knowledge based world and arrived at the following conclusions.

11.1. Verification of Hypotheses

This study has examined the following Hypothesis opinions of Marriott and Henderson with regard to short term incentives in the Indian Railways.

1. According to Marriott, "There is a large body of opinion that human beings, given the right conditions are stimulated to produce more if pecuniary inducement is directly linked to the effort they make". (Marriott:1968.) It is amply proved in the above two schemes that employees are stimulated to produce more if pecuniary inducement is directly linked to their effort. In both the incentive schemes of Railways – the PBR and the GIS – the monetary benefit is linked to their effort and they are suitably awarded incentive bonus commensurate with their work. That is the reason why in the perceptions of the employees both the beneficiaries of the scheme expressed their approval and support for the incentive schemes.
2. "Motivational value also increases when the timing of the delivery of the rewards is closely approximate to the demonstration of a behaviour, the completion of an assignment or the achievement of a result. These elements of motivational theory support the concept that the most powerful short-term incentive is one that relates the individual to the overall performance of the organization. This in no way implies that work unit* or organization-based short-term incentives have little motivational value. It just means that these two basic kinds of incentives are weaker than those relating to the contribution of the individual or those relating to team performance when the individual is a team member." (Henderson: 2013)

11.2. Suggestions

An examination of the above primary and secondary data the following suggestions are made to make the incentive schemes more effective, more useful to the employees and worthwhile to the Railways.

- i. To make GIS more appropriate the ceiling limit of 50% on bonus should be removed. This is more appropriate since both the technicians and officers have no grouse about quality linkage factors. They

- may even agree to their opposition to Plant production index and Plant index, continuing not considering a coach under out turn repaired after 90 days and penalization for rework if the ceiling limit on bonus is removed.
- ii. In both the schemes the technicians are not interested to go on training since they will be denied incentive bonus and they have specifically mentioned this in their responses. Therefore, the Railways should consider sanctioning some allowance to the technicians when they opt for training.
 - iii. There is need to include quality linkage factors in PBR and remove the ceiling limit of 50% on incentive bonus. The officers and supervisors expressed the same in their responses with quality linkage factors in place PBR will be more attractive to the technicians.
 - iv. There should be penalization for bad quality and for rework in PBR.
 - v. The documentation work is very cumbersome and there are more employees under PBR who could be deployed if GIS provisions like self-inspection are introduced in PBR.
 - vi. In both the schemes particularly about PBR there appears lack of awareness among the beneficiaries particularly among the technicians. As and when strict quality control provisions are introduced it is necessary to educate the technicians of PBR about the benefits of this scheme. This would motivate them to work to their optimum potential without harming their health.
 - vii. Implementation of GIS should be decentralized by delinking the scheme from the purview of RITES which has made the scheme more rigid and unresponsive. The present provision can be changed in such a way that the officers, supervisors and technicians of the workshop can make their suggestions and grievances to the local officers at the divisional and zonal level who will in turn forward the suggestions to the RITES for reconsideration and review.
 - viii. Without detriment to the present status of RITES it can always research and re-examine the implementation of GIS and make suggestions for improvement and in the best interests of the employees.
 - ix. The group attendance factor (GAF) appears to be a thorn in the flesh of the employees covered under GIS. In a group if one or two persons are absent the other members are taking over their responsibility and completing the job on hand. Under GAF even if the job is completed the employees will be penalized for the absence of a few of their colleagues for genuine reasons. This is the grouse of the employees that though the work is completed according to the schedule the group is getting a raw deal which is unjust, the GAF should be reconsidered and replaced with a suitable provision ensuring employee attendance as well as productivity.
 - x. The distinction between DWs and EIWs under PBR is artificial since there is no such distinction in GIS. It is therefore appropriate to remove the disparity in PBR.
 - xi. The present level of just 15% incentive is very unjust to supervisors (SSEs). It should be increased considerably. Thus, the bonus should be increased to the supervisory staff commensurate with their performance.
 - xii. From the responses of the technicians of both GIS and PBR there appears lack of understanding of the incentive scheme they are covered. Educating the technicians about the incentive programme they are covered should be included as part of the training programmes they undergo from time to time so that with proper knowledge of the provisions of the incentive schemes they will extent better cooperation to the supervisors and officers and derive appreciable monetary results for themselves.
 - xiii. The present study is first of its kind on the incentive scheme being implemented in the Indian Railways and so far there is no in-depth study or research publication either in print or on-line on the incentive schemes of Indian Railways. There is need to conduct more studies on the incentive bonus schemes of Railways.

REFERENCES

- [1]. Martocchio, Joseph J. Strategic Compensation. 7th ed. Pearson. Dorling Kindersley India Pvt. Ltd., New Delhi, 2014.
- [2]. Jackson, S.E. "Team Composition in organizational savings – Issues in managing an increasingly diverse workforce." Group process and Productivity (pp. 138-173) S. Worchel, W. Wood & J.A. Simpson (Eds.) CA: Sage, Newbury Park, 1992.
- [3]. Kanter, R.M. "When a thousand flowers bloom: Structural, collective and social condition for innovation in organization", Research in organizational Behaviour (Vol.10, PP. 169-211), CT: JAI, Greenwich, 1988.
- [4]. Kanim – Lowers, J & Camerson, M. "Team based reward systems", Journal of compensation and Benefits. January to February 1993, pp. 55-60.
- [5]. Worchel, S. Wood, w., & Simpson, J.A. (eds.). Group Process and Productivity. CA: Sage, Newbury Park, 1992.
- [6]. Schuster, J.R. & Zingheim, P.K. "Building pay environment to facilitate high performance teams", ACA Journal 2, 1999, pp.46-51.
- [7]. Greene, R.J. "Team Incentives". Incentive Pay : Creating a Competitive Advantage. D.Scott (ed.), Phoenix, AZ: World work Press, 2007.
- [8]. Belcher, J.G., Jr. "Gainsharing and variable pay" The state of the art". Compensation and Benefits Review. May-June, 1994, PP 50-60.
- [9]. Milkovich, G.T. & Newman, J.M. Compensation. (4th ed) IL: Irwin, Homewood, 1993.
- [10]. Lesiv, T.G. (ed). The Scanlon Plan: A Frontier in Labour Management cooperation. MA: MIT Press, Cambridge, 1958.
- [11]. Doyle, R.J. Gain sharing and productivity. American Management Associations, New York, 1983.
- [12]. Myers, D.W. Compensation Management. IL: Commerce clearing House, Chicago, 1989.

- [13]. Indian Railways Statistical Publications 2016-17 Ministry of Railways, Railway Board, New Delhi. Henderson, Richard I. Compensation Management in a Knowledge-Based World”, Pearson. Dorlington Kinderseley (India) Pvt. Ltd., New Delhi, 2013.
- [14]. Dessler, Gary. Human Resource Management. Crane and Russek, New York, 1976.
- [15]. Frederick W. Taylor. The principles of Scientific Management, Noreon, New York, 1947.
- [16]. International Labour office. Payment by Results. International Labour Organization, Geneva, Switzerland, 1984.
- [17]. Peck. Variable Pay: Non-Traditional Programs for Motivation and Reward. New York, The Conference Board, 1993.
- [18]. International Labour office. Payment by Results. International Labour organization. Geneva, Switzerland, 1984.
- [19]. Lazear, E.P. Personnel Economics for Managers. John Wiley & Sons, New York, 1998.
- [20]. Ministry of Railways. Indian Railway Code for the Mechanical Department (Workshops). Railway Board, New Delhi, 1991.
- [21]. RITES (A Government of India Enterprise). Implementation of Redesigned Incentive Scheme at Tirupati Coach Repair workshop of South Central Railway, Main Report. Ministry of Railways, New Delhi, June 2000. Taylor:1947

S.Vasudevaiah "Implementation Of Wage Incentive Schemes In Indian Railways - A Study Based On Employee Perception In Select Workshops "The International Journal of Engineering and Science (IJES),), 7.10 (2018): 24-54