

Incentive Scheme

INCENTIVE SCHEME

- This incentive scheme is also known as **“The system of payment by result”**
- Incentive scheme may be viewed as a **win-win solution** between the administration and the staff of an organization.

ADVANTAGES

FOR THE ADMINISTRATION

- No requirement of **additional manpower**
- **Higher and efficient** machine / assets utilization
- More productivity and **less pilferage of working hours**

FOR THE WORKERS

- It gives satisfaction of **“earning more by working more”** leading to more purchasing power and satisfaction
- And as an end result the Organization is benefited **with better industrial relations and discipline.**

Present Scheme

Presently existing incentive schemes in Indian Railway Workshops may be broadly grouped into two categories:

- (i) One is based on saving of time in each activity by the employee, thereby performing the activity in lesser time than the prescribed time - giving scope for increased outturn **(Chittaranjan Pattern)**.
- (ii) The other one is directly linked to outturn given by a group. This is Group Based Incentive Scheme **(Also known as Group Incentive Scheme)**.

Chittaranjan Pattern Incentive Scheme (CLW)

- 1) Chittaranjan Locomotive Works(CLW), Chittaranjan – in 1954
- 2) Diesel Locomotive Works(DLW) , Varanasi
- 3) ICF, Perambur – in 1960
- 4) Carriage Wagon Workshop, Liluah
- 5) Locomotive Workshop, Jamalpur
- 7) Carriage Wagon Workshop, Kharagpur

SALIENT FEATURES OF CLW PATTERN INCENTIVE SCHEME

- Chittaranjan Pattern incentive (CLW) scheme was **started in 1954 on Production Units** and **in 1958 on Indian Railway Workshops**.
- It is based on the time saved by workers against the prescribed time for each activity set by the work-study group.
- It is so designed that a **reasonably efficient** worker should be able to earn 33.33 % incentive.
- However the **maximum limit** set is that the employee can not save time more than 50% of the allowed time for an activity. i.e. more than 50% saving in time will not be eligible for incentive benefit.

Under this scheme, the workers are divided into three categories:

Direct worker(DW) :- Those work can be assessed through time study.

Essential Indirect Workers(EIW) :- Those who contribute to the continuity of the work but whose work can not be assessed through time study.

- They have a **ceiling limit of 80%** of the average incentive earned by the direct workers.

Indirect Workers(IW) :- Those who do not contribute directly or indirectly to the production. They do not get incentive bonus.

Normalising:-

Normal Time = $\frac{\text{Actual Time X Observed Rating}}{80}$ (i.e. incentive rating)

Allowed Time = Normal Time + Allowances

Allowances: Fatigue allowance= 12.5%,
Contingencies allowance = 10%,
Prod. Bonus allowance = 33 1/3%,
Gauging = 5% etc.

Time Saved = Allowed Time - Time Taken

Incentive Amount = Time saved (in hours) X Hourly rate of the worker

In this scheme, the idle time can be booked on the following counts:

- **Non availability of tools**
- **Non availability of work**
- **Power cut**
- **Machine run down.**

Checks and Balances

- 10-20% of excess time cards and 2-5% inspection sheets are to be personally checked by PE/APE.
- Jo cards are to be kept in the custody of time-booth clerk.
- All completed job cards should be sent to the Incentive Bonus Section within 48 hours of completion of job.
- Inspector should record the quantity passed for each operation on the job cards under his signature.
- Allowed times have to be approved by the PE.
- No overtime should be booked under the incentive conditions.
- Apprentices are not eligible for incentive scheme.
- Hand written job cards are certified by APE/PE.

MISUSES OF INCENTIVE SCHEME

1. Management & Supervisors Related:

- DWs shown as EIW & IW
- Penalty for excessive Idle-time not imposed
- ATs not revised on introduction of New Machines
- Outturn of one month shown in another

2. Worker – JE Nexus:

- Time lost in punching the next Job-card
- Loss making Job-cards not submitted
- More than one Job-card issued at a time

3. Stores Related:

- Work Orders issued without ensuring Raw Material availability.
- Alternative Raw Material offered too often.
- Raw Material offered in unusable form.

4. Accounts Related:

- Time Booths not manned throughout.
- Job-cards kept in the custody of Shop Supervisors.
- Tally Sheets not made / monitored regularly.

THE RETHINKING:

There has been a general view that the Chittaranjan Pattern of incentive Scheme is not working up to the expectations because of the following reasons:

- **Individual employee may earn the incentive leading to financial out flow for the administration but final Outturn of the Workshop is not increasing.**
- **There is no provision to take care of quality aspect of the work.**
- **There are scopes for manipulation of time saved by the employee.**

The lacunae in the 'Chittaranjan Pattern' forced the administration to rethink for a new scheme.

Hence the new Scheme, which is Group based and is directly linked to **Outturn given by the Group** known as '**Group Incentive Scheme**' which was introduced in Railway Workshop in CRS, Tirupati in 2002 (**also known as Tirupati Pattern of Group Incentive Scheme**)

Group Incentive Schemes (GIS) implemented in the following Railway Workshops by RITES (from Sl. No. 1 to 3)

- 1. Coach Rehabilitation Workshop, Bhopal(WCR) – in October, 2004**
- 2. Rayanapadu Workshop [Guntapalli / South Central Railway] – in year 2000**
- 3. Tirupapti Workshops / South Central Railway – in January, 2002**
- 4. Carriage Repair Workshop , Mancheswar/East Coast Railway
[not by RITES, by their own] – in September, 2003**

Group Incentive Schemes (GIS) implemented in the following Production Units (PUs) by RITES :

- 1) Rail Wheel Factory (RWF), Yalehenka/Bangalore in June 1990
- 2) Rail Coach Factory (RCF), Kapurthala in 1995–96
- 3) Diesel Modernization Works (DMW), Patiala in January 1999

RITES's On Going Projects on Group Incentive Scheme

- 1) Group Incentive Schemes at Charbag Workshop, Lucknow
- 2) Perambur Loco Workshop, Chennai
- 3) Golden Rock Workshop, Tiruchy / Southern Railway

TIRUPATI PATTERN OF GROUP INCENTIVE SCHEME

- For the first time this scheme is introduced on workshops in **Carriage Repair shop Tirupathi**, during January 2002, which was inaugurated by the Honorable Railway Minister Shri Nitish Kumar.

SALIENT FEATURES

(i) *It is a group based incentive scheme*

The incentive earned is dependent on the collective performance of the group in terms of :

- ❖ **Total Outturn in eGSCN given by the group.**
- ❖ **The total clocked in man-hours.**
- ❖ **Group Attendance Factor-** *To assist in getting better attendance at work a Group Attendance Factor (GAF) is introduced in the Scheme. This takes care of the absenteeism within the group i.e. the number of employees absent in the group will affect the entire group's incentive earning capacity.*
- ❖ **Quality of work performed** *without giving scope for en-route detachments, or sick markings within 100 days.*

(ii) Standard Production Unit (SPU) – An eGSCN type of Coach (**II Sleeper Class Coach**) is considered as Standard Production Unit.

- All the Units turned out by the group (say a Shop) are converted into **Standard Production Units(SPUs)** which are: eGSCN.
- **BITES** had provided with a '**Conversion Factor**' for various types of Coaches to convert into eGSCN

(iii) Conversion Factor - The conversion factor for other type of Coaches is fixed as per the allowed time compared to eGSCN Coach.

$$\begin{array}{l} \text{Conversion Factor for a} \\ \text{Coach type for a} \\ \text{particular Incentive} \\ \text{Production Group} \end{array} = \frac{\text{Man-hours at 100R for the coach type} \\ \text{applicable in the group}}{\text{Man-hours at 100R for equated} \\ \text{eGSCN Coach applicable in the group.}}$$

Conversion Factors

	CFS		CBR	Paint		TLS
	B	Retro			A' Sch.	
GSCN`	1.00	0.98	1.00	1.00	2.10	1.00
GS	1.00	0.98	0.92	0.85	1.94	1.00
GSCZ	1.00	0.98	0.93	1.00	2.10	1.00
SLR	1.03	1.01	0.98	0.90	1.99	1.00
FSCN	1.00	0.98	1.08	1.05	2.14	1.00
CNLR	1.03	1.01	0.89	0.95	2.04	1.00
WFC	1.00	0.98	0.89	1.11	2.20	1.00
DMU/DHMU/MEMU	-	1.06	0.86	1.00	2.10	0.8/0.9(MEMU)
VPU	1.00	0.98	0.89	0.79	1.88	0.10
AC	-	-	1.00	1.14	2.23	1.90
Others (Insp. Car with dual Brake) RA/RH	1.08	-	0.89	1.11	2.20	1.00

(iv) No-Overtime - Overtime booking though allowed (under RITES study) acts adversely on employee's incentive earning. However the final scheme as approved by Railway Board does not provide for booking of overtime.

(v) Idle Time - Idle time can be booked only in the event of power failure for more than one hour at one stretch. (unlike the Chittaranjan Pattern).

(v) All the staff in the Group are eligible for incentive under GIS.

(vi) Indicators of quality performance

This scheme takes into consideration indicators of performance like:

(i) Rectification man-hours

(ii) Coach Holding Factor

(iii) Quality Factors

(iv) En-route detachments

(v) Sick markings within 100 days after POH- while calculating the final incentive earned by the individual employee.

The workshop is classified in to 3 Groups namely:

- 1. Production Shop Group**
- 2. Support Shop Group**
- 3. Support Department Group**

Incentive earning %

(a) Production shops - 100%
incentive

(b) Support shops - 80%
incentive

(c) Support departments - 50%
incentive

❖ **SSE/SE are also eligible for incentive bonus @ 15% of the basic pay.**

I. PRODUCTION SHOP GROUPS

Shops directly connected with POH activities.

i) Carriage Fitting Shop (CFS)

ii) Carriage Body Repair Shop (CBR)

iii) Paint Shop

iv) Wheel Shop

v) Train Lighting Shop (TLS)

2. SUPPORT SHOPS

Shops indirectly connected with POH activities

- 1. Mechanical Millwright*
- 2. Electrical Millwright*
- 3. Machine Shop*
- 4. Coach Movement & Scrap Yard*
- 5. Smithy Shop*

3. SUPPORT DEPARTMENT GROUP

1. PCO Cell

2. M&P Section

3. Planning Cell

4. QSD (ISO) Cell

5. Computer Cell

6. Incentive Cell

4. Not covered under Incentive Scheme:

- 1. Coach Inspection Wing***
- 2. Material Inspection Wing***
- 3. Basic Training Centre***
- 4. Outside Power Maintenance***
- 5. All Ministerial Staff***
- 6. Personnel Department***
- 7. Accounts Department***
- 8. Stores Department.***
- 9. Security Department***
- 10. Drawing Office.***

SPU MAN HOURS FOR eGSCN

- i) Carriage Fitting Shop* = **557.46**
- ii) Carriage Body Repair Shop* = **1064.66**
- iii) Paint Shop* = **243.833**
- iv) Wheel Shop* = **26.91**
- v) Train Lighting Shop* = **224.367**

❖ **Incentive for Production Shops worked in two stages.**

1. **Based on outturn of the individual Shop.**
2. **Based on outturn of the Workshop to traffic.**

Accordingly,

- ❖ **70% Incentive for individual Shop Outturn.**
- ❖ **30% Incentive for Workshop Outturn to Traffic.**

Salient Features:

- Monthly targets for each month for each Incentive Production group was kept directly proportional to number of working days in the month.
- Idle time booking was permitted only in the event of failure of external power supply, when it exceeded 60 minutes at a stretch for each occurrence. Idle time booking on no other account was permissible.
- **No ministerial** category personnel were covered under incentive working in any incentive covered Group.

- **Incentive earning Factor** is calculated using the minimum pay scale for each category eligible for incentive scheme coverage.
- Individual member incentive earning is directly proportional to **member's own clocked in hours** during the month.
- Coach detained for **more than 90 days** in the Workshop are not counted for incentive purpose.
- Under instructions of Railway Board, **Leave Reserve** provision under proposed Incentive Scheme for Tirupati Shop was kept at 12.5%.

INCENTIVE CONTROLLING FACTORS

❖ To have control over coach detention, absenteeism and to ensure quality, following factors were incorporated :-

1. **Coach Holding factor**
2. **Group attendance factor**
3. **Rectification man-hours**
4. **Quality linkage factor**

❖ COACH HOLDING FACTOR (CHF)

Cycle time for detention of Coaches have been given for each Production Shop which are as under.

CF Shop = 3.0 days.

CBR Shop = 9.5 days.

Paint Shop = 5.0 days.

T/L Shop = 2.0 days.

Target holding days = $\frac{\text{Standard Monthly Target X Cycle time}}{\text{Number of working days in the month}}$

Actual detention days = $\frac{\text{Total SPU days}}{\text{Total SPU}}$

Coach holding factor = $\frac{\text{Target holding days}}{\text{Actual detention days}}$

- **There is no cycle time for wheel shop since wheel-sets are unit exchangeable spares.**
- **If any Shop exceeds the cycle time, the coach holding factor will be reduced which in turn affects incentive earning.**

GROUP ATTENDANCE FACTOR (GAF)

- Group attendance factor is introduced to have control over absenteeism by group members. The individual member incentive earning increase with maximum hours present. Hence the Leave/Sick/ Absenteeism percentages is reduced.

$$\begin{aligned} \text{Group Attendance Factor} &= \text{Actual clocked in man-hours of the group} \\ \text{for the month of the} & \qquad \qquad \qquad \text{less} \\ \text{Incentive Production Group} & \text{ OT hours booked by group members} \\ & \text{-----} \\ & \text{0.875 x On strength x Actual working x 8 hrs.} \\ & \qquad \qquad \qquad \text{days in month} \end{aligned}$$

Rectification Man-hours

*If a group is forced to spend more time than required to perform an activity because of the low quality work/ incomplete work, the additional time spent to rectify it, is called the '**rectification man-hours**' and this factor acts negatively on the incentive earned by the group and the individuals of that group.*

For the reworks pointed out by inspection wing or by NTXR, the Group is penalized by adding 3 times the rectification hours to the clocked in hours.

❖ QUALITY LINKAGE FACTORS

To ensure Quality of Production, Quality linkage Factors are incorporated. The Quality linkage factor is directly multiplied by the incentive earning factor of all Shops.

The Quality Linkage Factor =Q is as under :

Q1. NTXR Local passing.

Q2. Coaches marked sick within 100 days after the POH.

Q3. Enroute coach detachments.

The Quality linkage factor $Q = \frac{Q1 + Q2 + Q3}{3}$

For Q1, Q2 & Q3, the performance of the Shops has to be compared with the following.

- 1. Performance of the Shop in the last year.**
- 2. Global performance i.e. the performance of the I.R.**

If the performance is better in both, the Quality Linkage Factor will be 1.0.

If the performance is better in one and bad in other the Quality linkage factor will be 0.95 for staff & JE's and 0.90 for SSE's/SE's.

If the performance bad in both the quality linkage factor will be 0.90 for staff & JE's and 0.85 for SSE's/SE's.

CALCULATION OF QUALITY LINKAGE FACTOR

Q1 -----→ 1 Since all coaches are NTXR certified.

Q2 -----→ Sick marking within 100 Days.

CRS average 2003 - 2004 = 1

Global average 2003 – 2004 = 3

CRS average for Jul' 04 = 0

Better than CRS average & Global average

Hence Q2 = 1

Q3 = 1 Since NO Enroute coach detachments.

Hence Quality Linkage Factor Q = 1

Case Study— Calculate the incentive amount of a worker in the Production Shop under GIS for the month of January, 2013 with the following data:

Staff Strength = 184

On-roll strength = 189

Annual Target = 600

No. of working days = 26 days

No. of working days in the year = 295 hrs.

Incentive Earning Factor of the worker = Rs. 35.50

Leave reserve 12.5%

Clocked –in man-hour = 30072 hrs.

Dispatch in the month = 64.76 SPU

Allowed Time for Production Shop = 557.46 man-hrs.

Rectification man-hour = 98 man-hrs.

Idle time man-hrs. = 0, Coach Holding Factor = 1

Calculations :

$$\begin{aligned} (1) \text{ Group Standard Monthly Target} &= \frac{\text{Annual Target in SPU}}{\text{No. of working days in a year}} * \text{No. of working days in the month} \\ &= \frac{600 \times 26}{295} = 52.89 \end{aligned}$$

$$\begin{aligned} (2) \text{ Standard man-hour for the Group in the month} &= 0.875 * \text{On roll strength} * \text{working hours in the month} \\ &= 0.875 \times 189 \times 208 = 34398 \end{aligned}$$

Actual Clocked in Hours

$$\begin{aligned} (3) \text{ Group Attendance Factor} &= \frac{\text{Actual Clocked in Hours}}{0.875 * \text{on roll strength} * \text{working hours in the month}} \\ &= \frac{30072}{0.875 \times 189 \times 208} = 0.87423 \end{aligned}$$

$$\begin{aligned} (4) \text{ Available man-hours} &= \text{Clocked in man-hours} \\ &\quad - \text{idle time man-hours} \\ &\quad + (3 * \text{rectification man-hours}). \\ &= 30072 - 00 + 3 \times 98 = 30368 \end{aligned}$$

(5) Group Production Norms for the Group in SPU for the month

$$\begin{aligned} &= \frac{\text{Group Standard Monthly Target} * \text{Available man-hours}}{\text{Standard man-hour for the group in the month}} \\ &= \frac{52.89 \times 30368}{34398} = 46.6935 \end{aligned}$$

$$(6) \text{ Group Base Output of the Group in SPU} = 0.833 * \text{Group Production Norms}$$

$$= 0.833 \times 46.6935 = 38.89569$$

$$(7) \text{ Group Production Index} = \frac{\text{Group Eligible Dispatch} * \text{Group Coach Holding Factor} * \text{Group attendance Factor}}{\text{Group Base Output}}$$

$$= \frac{64.76 \times 1 \times 0.87423}{38.89569} = 1.45556$$

$$(8) \text{ Applicable Weightage Factor} = \frac{\text{Allowed Time at 100R} * \text{Standard Monthly Target of a Shop}}{\text{Sum of (Allowed Time} * \text{Standard Monthly Target) of all Shops}}$$

$$= \frac{557.46 \times 52.89}{117643.62407} = 0.25062$$

$$(9) \text{ Plant Production Index (PPI)} = \text{Applicable Weightage Factor} * \frac{\text{Group Eligible Dispatch}}{\text{Group Base Output}}$$

$$= \frac{0.25062 \times 64.76}{38.89569} = 0.41727$$

Gross Production Index (GPI) = (0.7 x Group Production Index) + (0.3 x Plant Production Index)
= (0.7 x 1.45556) + (0.3 x 0 .41727) = **1.144073**

Individual Incentive Earned (Production Shop) = **(GPI-1)** x **Incentive Earning Factor**
x **Actual Clocked in hours of the Employee**
x **Quality Linkage Factor**

= (0.144073) x198 x35.50 x 1
= Rs. 1012.69

PLANT PRODUCTION INDEX (PPI) SHEET FOR AUGUST - 2004

	CF SHOP	CBR SHOP	PAINT SHOP	WHEEL SHOP	TRAIN LIGHTING
Allowed Time	557.46°	1064.66°	243.833°	26.91°	224.367°
Group Std. Monthly Target	52.34899	52.34899	52.3489 9	305.36913	52.34899
Group Base Output	42.56117	41.40022	42.84659	222.53745	46.78035
Group Eligible Despatches (Plant)	64.760	66.190	67.300	373.380	71.730

Applicable Weightage Factor = $\frac{\text{Alld time at 100R X Std.Mly.Target of shops}}{\text{Sum of Alld time X Std. Mly.Tgt of all shops}}$

$$\begin{aligned}
 & 557.46 \times 52.349 + 1064.66 \times 52.349 + 243.833 \times 52.349 + 26.91 \times 305.369 + 224.367 \times 52.349 \\
 = & \frac{29182.46797 + 55733.87569 + 12764.41128 + 8217.48329 + 11745.38584}{=} \\
 & = 117643.62407
 \end{aligned}$$

INCENTIVE WORKING SHEET FOR AUGUST - 2004 (PRODUCTION SHOPS)

Working Days : 26		Working Hours : 209.5		Quality Linkage factor : 1	
	CF SHOP	CBR SHOP	PAINT SHOP	WHEEL SHOP	TRAIN LIGHTIN G
Staff at 120R for 600 Coaches	184	336	107	74	112
On Roll Strength	189	332	107	69	118
Group Std. Monthly Target	52.34899	52.34899	52.34899	305.36913	52.34899
Std. Man Hours	33729.500	61593.000	19614.438	13565.125	20531.000
Actual clocked In Man Hrs.	32614.000	56953.250	18664.900	11862.733	20516.500
Rectification Man Hrs.	97.91667	500	200	0	500
Group Attendance Factor	0.94135	0.93581	0.95159	0.93787	0.94848

INCENTIVE WORKING SHEET FOR AUGUST - 2004 (PRODUCTION SHOPS)

	CF SHOP	CBR SHOP	PAINT SHOP	WHEEL SHOP	TRAIN LIGHTING
Available Man Hrs	32907.750	58453.250	19264.900	11862.733	22016.500
Group Production Norm	51.07362	49.68046	51.41611	267.04601	56.13665
Group Base Output	42.56117	41.40022	42.84659	222.53745	46.78035
Group Eligible Despatches (Group)	66.880	66.694	68.150	361.380	71.730
Grp. Coach Holding Factor	1	1	1	1	1

INCENTIVE WORKING SHEET FOR AUGUST - 2004 (PRODUCTION SHOPS)

	CF SHOP	CBR SHOP	PAINT SHOP	WHEEL SHOP	TRAIN LIGHTING
Grp. Production Index	1.47922	1.50755	1.51356	1.52301	1.45434
Group Eligible Despatches (Plant)	64.760	66.190	67.300	373.380	71.730
Plant Production Index	0.37744	0.75742	0.17042	0.11720	0.15309
Gross Production Index	1.50812	1.52796	1.53216	1.53878	1.49071
Individual Incentive earning for a member =	<p>= GPI -1 x Applicable incentive earning factor x Clocked in hours by a member / Scheduled working hours x Quality linkage factor</p>				

INCENTIVE WORKING SHEET FOR AUGUST - 2004 (SUPPORT SHOPS)

Working Hours = 209.5		Linkage Factor : 0.8			
	MMW SHOP	EMW SHOP	MCS SHOP	CMSY SHOP	SMITHY SHOP
Authorised strength at 120R	88	47	26	31	17
On Roll Strength	84	45	22	28	15
Actual clocked in Man Hours	13719.46 7	7777.733	3648.300	4981.500	2604.500
Group Attendance Factor	0.91271	0.92237	0.90464	0.97053	0.94720

INCENTIVE WORKING SHEET FOR AUGUST - 2004 (SUPPORT SHOPS)

<p>Authorised strength</p> <p>Std. M.P.R for Support Shops = ----- -----</p>	<p style="text-align: center;">Arithmetic sum of</p> <p style="text-align: center;">Of all production shops @ 120R for 600 eGSCN</p> <p style="text-align: center;">Authorised strength of support shops @ 120R for 600 eGSCN</p>	<p>813</p> <p>= -----</p> <p>209</p>	<p>3.88995</p>
<p>Actual M.P.R. = ----- -----</p>	<p style="text-align: center;">Actual over all strength of all production shops</p> <p style="text-align: center;">Actual On Roll strength of support shops</p>	<p>815</p> <p>= -----</p> <p>193</p>	<p>4.22280</p>
<p>Group performance efficiency =</p>	<p>Actual M.P.R</p> <p>-----</p> <p>Std. M.P.R</p>	<p>4.22280</p> <p>-----</p> <p>=</p> <p>3.88995</p>	<p>1.08557</p>

INCENTIVE WORKING SHEET FOR AUGUST - 2004 (SUPPORT SHOPS)

$$\text{Weighted Performance index} = \frac{\text{Sum of (GPI x On Roll Strengthof all production shops)}}{\text{Sum of Actual On Roll Strengthof all production shops}}$$

$$= \frac{(1.50812 \times 189) + (1.52796 \times 332) + (1.53216 \times 107) + (1.53878 \times 69) + (1.49071 \times 118)}{189 + 332 + 107 + 69 + 118} = 1.51943$$

Individual Incentive earning
for a member =

- = Weighted performance index – 1
- x Support shop incentive linkage constant = 0.8
- x Support shop incentive group performance efficiency
- x Individual shop attendance factor
- x Applicable incentive earning factor
- x Clocked in hours by a member / Scheduled working hours
- x Quality linkage factor

INCENTIVE WORKING SHEET FOR AUGUST -2004 (SUPPORT DEPARTMENTS)

Working Hours =209.5	Linkage Factor : 0.5
	IED
Authorised strength at 120R	19
On Roll Strength	17
Actual clocked in Man Hours	2736.31667
Group Attendance Factor	0.87806

INCENTIVE WORKING SHEET FOR AUGUST - 2004 (SUPPORT DEPARTMENTS)

<p>Std. M.P.R for Support Department</p>	<p style="text-align: center;">Arithmetic sum of Authorised strength Of all production shops @ 120R for 600 eGSCN</p> <p style="text-align: center;">= ----- =</p> <p style="text-align: center;">Authorised strength of support department @ 120R for 600 eGSCN</p>	<p>813</p> <p>----- =</p> <p>19</p>	<p>42.78947</p>
<p>Actual M.P.R. =</p>	<p style="text-align: center;">Actual over all strength of all production shops</p> <p style="text-align: center;">----- =</p> <p style="text-align: center;">Actual On Roll strength of support Department</p>	<p>815</p> <p>----- =</p> <p>17</p>	<p>47.94118</p>
<p>Group performance efficiency =</p>	<p style="text-align: center;">Actual M.P.R</p> <p style="text-align: center;">----- =</p> <p style="text-align: center;">Std. M.P.R</p>	<p>47.94118</p> <p>----- =</p> <p>42.78947</p>	<p>1.12040</p>

INCENTIVE WORKING SHEET FOR AUGUST- 2004 (SUPPORT DEPARTMENTS)

$$\begin{aligned}
 \text{Weighted Performance index} &= \frac{\text{Sum of (GPI x On Roll Strengthof all production shops)}}{\text{Sum of Actual On Roll Strengthof all production shops}} \\
 &= \frac{(1.50812 \times 189) + (1.52796 \times 332) + (1.53216 \times 107) + (1.53878 \times 69) + (1.49071 \times 118)}{189 + 332 + 107 + 69 + 118} = 1.51943
 \end{aligned}$$

Individual Incentive
earning for a member =

- = Weighted performance index – 1
- x Support shop incentive linkage constant = 0.5
- x Support shop incentive group performance efficiency
- x Individual shop attendance factor
- x Applicable incentive earning factor
- x Clocked in hours by a member / Scheduled working hours
- x Quality linkage factor

CALCULATION OF COACH HOLDING FACTOR SHEET FOR AUGUST - 2004

Target holding days = $\frac{\text{Standard Monthly Target} \times \text{Cycle time}}{\text{Number of days in the month}}$

Actual detention days = $\frac{\text{Total SPU days}}{\text{Total SPU}}$

Coach holding factor = $\frac{\text{Target holding days}}{\text{Actual detention days}}$

	CF SHOP	CBR SHOP	PAINT SHOP	TRAIN LIGHTING
Cycle time in days	3	9.5	5	2
Monthly target	52.34899	52.34899	52.34899	52.34899
Coach detention days in SPU	363.730	399.063	215.360	209.660
Dispatches in SPU	66.880	66.694	68.150	71.730

NO CYCLE TIME FOR WHEEL SHOP.

CALCULATION OF COACH HOLDING FACTOR SHEET FOR AUGUST - 2004

	CF SHOP	CBR SHOP	PAINT SHOP	TRAIN LIGHTING
Target Holding Days	3×52.34899 ----- 26 = 6.04029	9.5×52.34899 ----- -- 26 = 19.12752	5×52.34899 ----- -- 26 = 10.06711	2×52.34899 ----- -- 26 = 4.02684
Actual Detention Days	363.730 ----- 66.88 = 5.43855	399.063 ----- 66.694 = 5.98349	215.360 ----- 68.15 = 3.16009	209.660 ----- 71.73 = 2.92291
Coach Holding Factor	6.04029 ----- 5.43855 = 1.11064 Max. 1	19.12752 ----- 5.98349 = 3.19672 Max. 1	10.06711 ----- 3.16009 = 3.18570 Max. 1	4.02684 ----- 2.92291 = 1.37769 Max. 1

PLANT PRODUCTION INDEX (PPI) SHEET FOR AUGUST - 2004

	CF SHOP	CBR SHOP	PAINT SHOP	WHEEL SHOP	TRAIN LIGHTING
Allowed Time	557.46°	1064.66°	243.833°	26.91°	224.367°
Group Std. Monthly Target	52.34899	52.34899	52.3489 9	305.36913	52.34899
Group Base Output	42.56117	41.40022	42.84659	222.53745	46.78035
Group Eligible Despatches (Plant)	64.760	66.190	67.300	373.380	71.730

Applicable Weightage Factor = $\frac{\text{Alld time at 100R X Std.Mly.Target of shops}}{\text{Sum of Alld time X Std. Mly.Tgt of all shops}}$

$$\begin{aligned}
 & 557.46 \times 52.349 + 1064.66 \times 52.349 + 243.833 \times 52.349 + 26.91 \times 305.369 + 224.367 \times 52.349 \\
 = & \text{-----} \\
 & 29182.46797 + 55733.87569 + 12764.411.28 + 8217.48329 + 11745.38584 \\
 & = 117643.62407
 \end{aligned}$$

PLANT PRODUCTION INDEX (PPI) SHEET FOR AUGUST-2004

CF	$29182.46797 / 117643.62407 = 0.24806$
CBR	$55733.87569 / 117643.62407 = 0.47375$
PAINT	$12764.41128 / 117643.62407 = 0.10850$
WHEEL	$8217.48329 / 117643.62407 = 0.06985$
TRAIN LIGHTING	$11745.38584 / 117643.62407 = 0.09984$

AWF X Plant Despatches

PPI = $\frac{\text{-----} + \text{-----} + \text{-----} + \text{-----} + \text{-----}}{\text{Group Base Output}}$ of all shops

$$\begin{aligned}
 & \mathbf{0.24086 \times 64.760} \quad \mathbf{0.47375 \times 66.190} \quad \mathbf{0.10850 \times 67.300} \quad \mathbf{0.06985 \times 373.380} \\
 & \quad \quad \quad \mathbf{0.09984 \times 71.730} \\
 = & \text{-----} + \text{-----} + \text{-----} + \text{-----} + \text{-----} \\
 & \mathbf{42.56117} \quad \mathbf{41.40022} \quad \mathbf{42.84659} \quad \mathbf{222.53745} \quad \mathbf{46.78035} \\
 = & \mathbf{0.37744} + \mathbf{0.75742} + \mathbf{0.17042} + \mathbf{0.11720} + \mathbf{0.15309} = \mathbf{1.57557 \times 0.3} = \\
 & \quad \quad \quad \mathbf{0.47267}
 \end{aligned}$$

Draw Back of Group Incentive Scheme

- To meet the demand of production Shop, supplying Shops may not have sufficient work load if more items are affected to trade. **Proper load planning & close monitoring** is required by top management which may be absolutely hypothecated.
- Though +ve points are given to **rework**, it can be manipulated at all levels, no proper controlling mechanism was recommended.
- In case of **frequent power failure**, production will hamper and hence every power failure has to be taken into account.
- Though theoretically correct, the **regular work avoiding workmen** will continue his habit since he can earn incentive payment without working.

CONCLUSION

- *This scheme will yield good results provided there is a strict monitoring from the administration.*
- *Various sub- groups in the workshop have to work in tandem to achieve the additional outturn for the workshop.*
- *It is required to maintain the additional feed constantly and continuously at an increased level.*
- *From the point of view of the workers, they should not be deprived of incentive for want of additional feed to avoid inviting any labour problem.*
- *There is a possibility of premature POH to keep up the additional feed to the incentive shops.*

THANK YOU