Workshop Accounts

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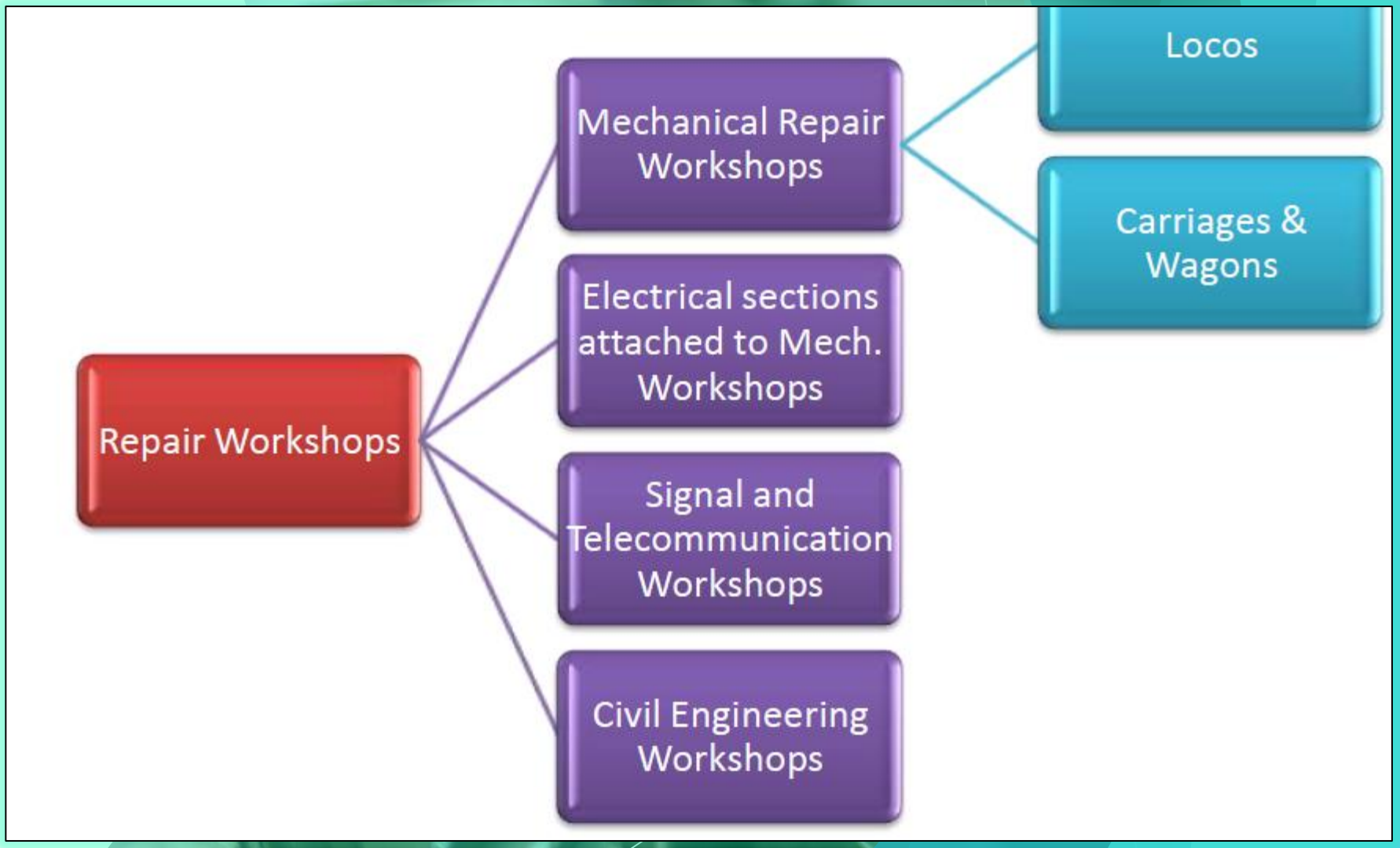
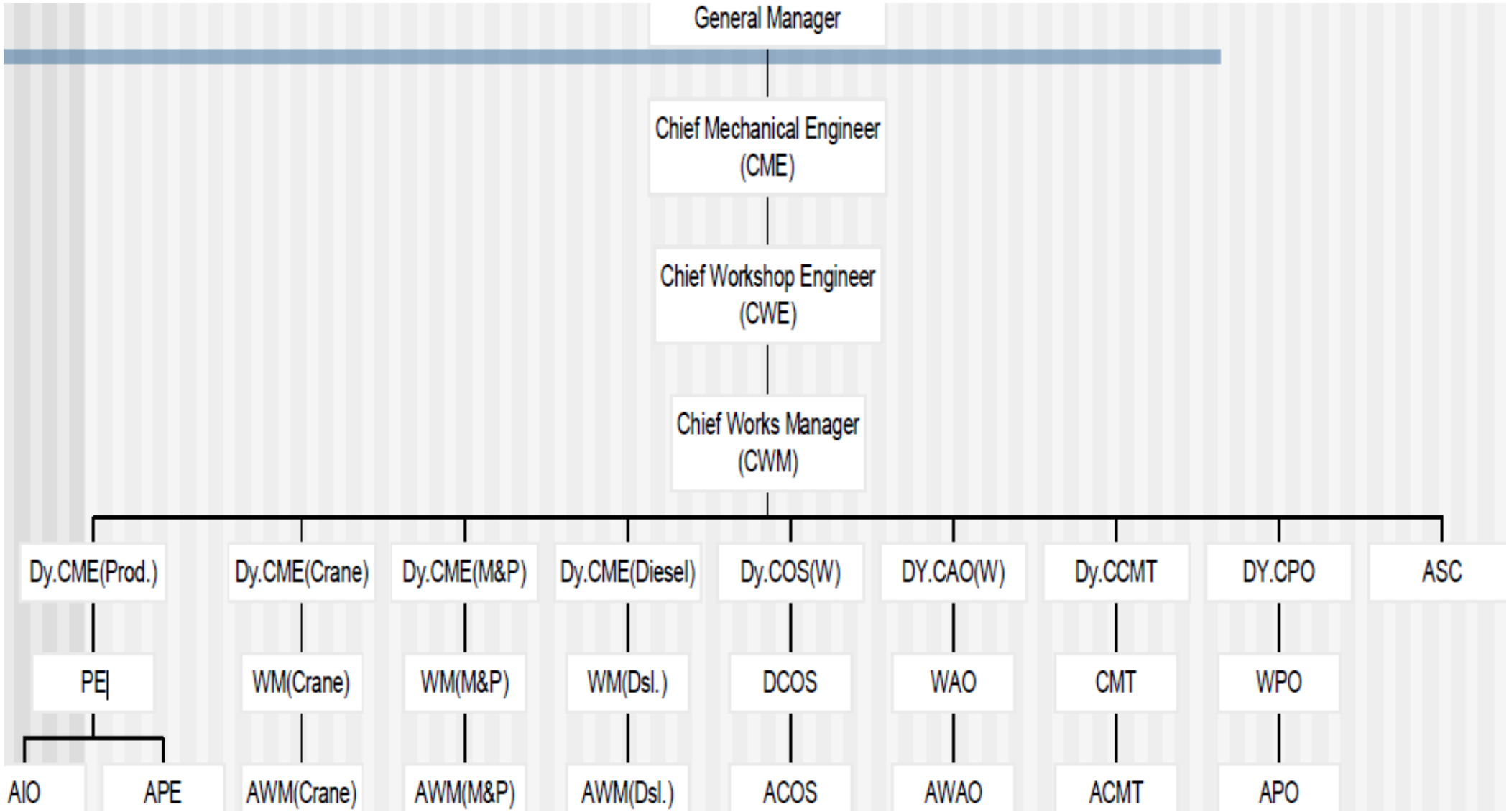
Workshop Organisation in the Mechanical Department




General Manager
Chief Mechanical Engineer (CME)
Chief Workshop Engineer (CWE)
Chief Works Manager (CWM)
Dy.CME(Prod.)
Dy.CME(Crane)
Dy.CME(M&P)
Dy.CME(Diesel)
Dy.COS(W)
DY.CAO(W)
Dy.CCMT
DY.CPO
ASC
PE
WM(Crane)
WM(M&P)
WM(Dsl.)
DCOS
WAO
CMT
WPO
AIO
APE
AWM(Crane)
AWM(M&P)
AWM(Dsl.)
ACOS
AWAO
ACMT
APO

Accounts Organisation in the workshops

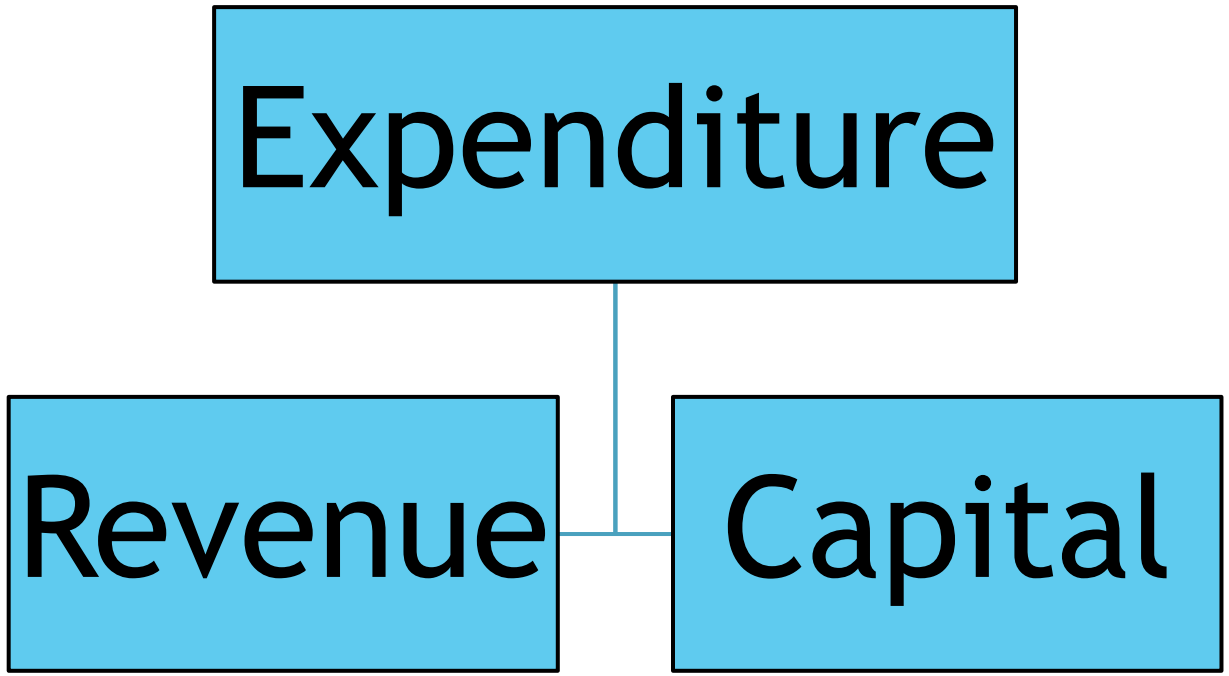
- **Dy.CAO or WAO (Workshop Accounts Officer**) in the Workshop is in charge of all the costing and accounting of the workshop.

- Financial Adviser to the Head of the Workshop and is responsible for rendering him all the assistance and cooperation that may be required by the latter.

- Administratively under the control of the Financial Advisor and Chief Accounts Officer (FA&CAO) of the Railway.

Railway Earnings

- Classification of Earnings
  - Abstract “X” - - Earning from Coaching traffic
  - Abstract “Y” - Earning from Goods traffic
  - Abstract “Z” - Sundry other Earning



- Ordinary Working Expenses incurred by various departments.
- Expenditure on Railway Board, Audit, Surveys, Centralized
- Training Institutes, RDSO etc.
- Appropriation to Depreciations Reserve Fund, Pension Fund

Acquisition, construction and replacement / renewals of assets
under various “Plan Heads”.
- Infrastructure development

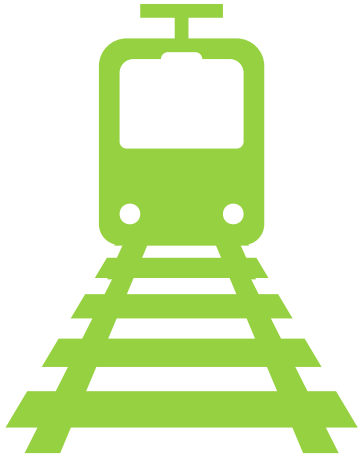
Demand for grants

- The expenditure on Railways may be either voted or charged. The expenditure covered under the former category requires the approval of Parliament.

- The votable part of expenditure together with the charged appropriation are presented to Parliament in the form of Demands for Grants.

DEMAND NO.	DESCRIPTION
1	Railway Board
2	Miscellaneous expenditure (General)
3	General superintendence and services on Railways
4	Repairs and maintenance of Permanent way and Works
5	Repairs and Maintenance of Motive Power
6	Repairs and Maintenance of Carriages and Wagon
7	Repairs and Maintenance of Plant and Equipment
8	Operating Expenses-Rolling Stock and Equipment
9	Operating Expenses-traffic
10	Operating Expenses-Fuel
11	Staff Welfare and Amenities*
12	Miscellaneous Working expenses
13	Provident fund Pension and other Retirement benefits
14	Appropriation to Funds
15	Dividend to General revenues (will not be operated due to merger of Railway Budget with General Budget)
16	Acquisition Construction & replacement of Assets

- Revenue Demand No : 1 to 13 generally used by executives
- 14 and 15 are used by finance.



Revenue Expenses: Abstracts

- Revenue working expenses of the railways have been classified in to 13 abstracts and each abstract has been given a different alphabet to identify the expenditure.

- Demands related to Mechanical Department
  - 1) No: 5 C (Running Loco repairs)
  - 2) No: 6 D (Running C&W repairs)
  - 3) No: 7 E (M&P repair)
  - 4) No: 8 F (Fuel , lube Oil and Brake Blocks)

Abstract	Demand	Activities	Department
A	3	General Superintendence and Services	All
B	4	Repairs+ Maintenance of Way and Works	Engg
C	5	Repair and Maintenance of Motive Power	Mech/Elect
D	6	Repair and Maintenance of carriage and wagon	Mech.Elec.EMUP-TL
E	7	Repair and Maintenance of Plant and Equipment	Elect.Mech.S&TCivil
F	8	Operating Expenditure (Rolling Stock and Equipment)	Mech/Elect
G	9	Operating Expenditure (Traffic)	Optg/Comml
H	10	Operating Expenditure (Fuel)	CoalDieselElect
J	11	Staff Welfare and Amenities	Edn Health Residential building
K	12	Miscellaneous working expenses	SecurityClaim comp.catering Training
L	13	Pensionary benefit	All Depts

Abstract classification is in line with the demand for grants.

On computerization of the accounting system, the alpha of the abstract classification will be substituted by a Numerical Code as follows:-

A-03, B-04, C-05, D-06, E-07. F-08, G-09, H-10, J-11, K-12, L-13, M-14 & N-15

Primary Units of Revenue & Capital

- A two-digit code to represent the primary unit, i. e. the object of the expenditure indicating on "what" the expenditure is incurred viz., salary, allowances, wages, materials, consumable stores etc.

- Apart from recording the expenditure under various abstracts and detailed heads and sub-detailed heads representing a particular activity, the components of such activity are further analyzed under different units, called Primary units of expenditure.

01 Salaries and Wages

02 Dearness Pay and Dearness Allowances

03 Productivity Linked Bonus

04 House Rent allowances

05 Compensatory (City) Allowances

06 Interim Relief

07 Transport allowance

08 New Pension scheme

09 Wages of Casual Labour

10 Kilometre allowance

11 Overtime allowance

27 Cost of materials from stock

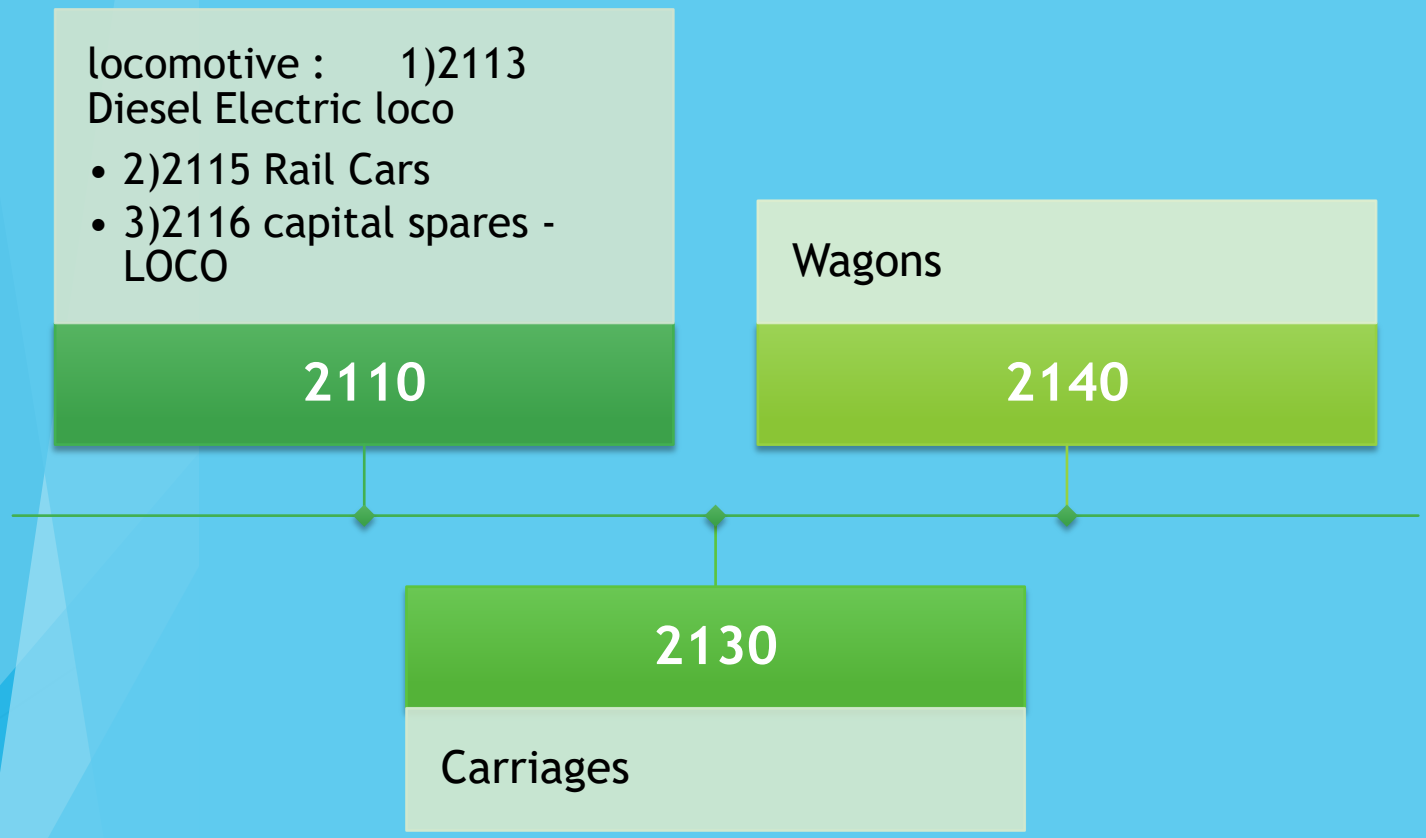
28 Cost of materials-Direct purchase

Capital : Demand No : 16

- Capital Demand No 16 is having Sub heads from
- 1) PH-16 (Traffic facilities and yard remodeling)
- 2) PH-17 (Computerization)
- 3) PH-21 (Rolling Stock)
- 4) PH-41 (Machinery And Plants)
- 5) PH-42 (Work shops including P-Units)
- 6) PH-53 (Passenger Amenities)
- 7) PH-64 (Other specific works)

Plan Head	Name	Plan Head	Name
11	New Line	12	Purchase of new lines
13	Restoration of dismantled lines	14	Gauge conversion
15	Doubling	16	Traffic facilities, yard remodelling
17	Computerisation	18	`Railway Research
21	Rolling Stock	29	Road Safety Works-Level crossing
30	Road Safety Works - Road Over/ under bridges	31	Track renewals
17	Computerisation	18	Railway Research
21	Rolling Stock	29	Road Safety Wroks-level crossing
30	Road Safety works - Road Over/under bridges	31	Track renewals
32	Bridge Works	33	Signalling and Telecomm works
34	Taking over line wires from P&T dept	35	Electrification projects
36	Other electrical works	41	Machinery and Plant
42	Workshops incl.Prod.Units	51	Staff quarters
52	Amenities for staff	53	Passengers amenities
62	Inv.in Govt. Comm.undertaking	64	Other Specified works
71	Stores suspense	72	Manufacture suspense
73	Miscellaneous advances	81	Metropolitan Transport Project
82	Transfer to SRSP		

PH-21 (Rolling Stock)



Budgeting

- Budget grant , Re-appropriation
- Budget estimated for next Year
- Revised grant , Re-appropriation
- Final Modification
- Final grant

Costing in workshops

Elements of Costing System in Workshops:

- i) Material Cost
- ii) Labour Cost
- iii) On cost

Introduction – P C O (Production Control Organization)

P C O

1.Production control

- A. Pre-planning
- B. Rate fixing
- C. Process

2.Progress

Watch the progress of products from process shops to Machine shops and to Stores Depot

3. Inspection

Inspection of quality as well as Quantity

Incentive Scheme in Workshops

Classification of staff under CLW Incentive Scheme in Workshops

The classification of staff under CLW incentive scheme in Workshops are as under:

- **Direct Worker(DW):** Sr Technician, Technician I, Technician II, Technician III
- **Essential Indirect Worker(EIW) :** Crane Driver, Gunner, Rigger, JEs
- **Indirect Worker(IW):** Helper I & Helper II

Fixing of Allowed Time (AT)

Observed Time :- The actual time recorded during time study on completion of the element.

Performance Rating of Workers: -

- It is the assessment of the skill and effort applied by a worker while completing a work & every worker should be rated independently.
- It is based on the principle that an average worker working under the non incentive conditions just to earn his basic wage, is said to be working at 60 rating (or he could be said to be producing 60 units of work per hour)
- The same average worker while working under incentive conditions can work at such a speed and with such effort to earn 33.33 % incentive i.e. at an 80 rating (or producing 80 units of work per hour)
- This rating is done by the rate fixers of the rate fixing department.

Normalizing: -

- After completion of the time study, the actual times of all the elements in the work cycle should be converted to the time at 80 rating i.e. the time which the average worker should take to do each element when working under a incentive scheme.

Example : Let the **normal time** of all the elements as a result of number of studies (average) = 1 Hour.

Solution : - Nomal Time = 1 hr.

Add allowances as under.

(a) Fatigue 12.5 % = 1 x 0.125 = 0.125 hrs.

= 1 + 0.25 **= 1.125 hrs.**

(b) Contingency 10 % = $\frac{1.125 \times 10}{100}$ = 0.1125 hrs.

= 1.125 + 0.1125 **= 1.238 hrs.**

c) Bonus 33⅓ % = $\frac{1.238 \times 100}{3 \times 100}$ = 0.413 hrs.

= 1.238+ 0.413 **= 1.651 hrs.**

(d) Gauging 5 % (not on jobs) = $\frac{5 \times 1.651}{100}$ = 0.083

= 1.651+0.083 **= 1.734 hrs.**

Allowed time for this job = 1.734 hrs.

Time Taken = 75 % of the allowed time of 1.734 hrs.
= 1.301 hrs.

Time saved = 1.734 hrs.—1.301=0.433 hrs.

Preparatory Time

- The preparatory time is added per batch.
- This is the time taken by a worker in collecting and drawing tools, raw materials etc.

Extra Time: Extra time over the allowed time can be allowed due to:

(i) Excess machining work required on castings, forgings, bar etc.

(ii) Hard material.

(iii) Defect in machine for which the worker is not responsible

- Supervisors and EIW: 80% of bonus earned by the section

Incentive Bonus Rates

- Time saved or lost will be evaluated at the Incentive Bonus hourly rates as fixed by the Railway Board for different categories of staff from time to time.

Designation	Pay Range (Rs.)	Hourly Rate (Rs.)
Jr. Engineer Gr. I	5500-9000	26.45
Jr. Engineer Gr. II	5000-8000	24.00
Senior Technician	5000-8000	24.00
Supervisor	4500-7000	21.65
Technician Gr. I	4500-7000	21.65
Technician Gr. II	4000-6000	19.25
Technician Gr. III	3650-4590	17.55
Technician Gr. III	3050-3575	14.65
Semi skilled	2750-4400	13.20
Unskilled	2550-3200	12.25

ON COSTS

- Expenditure which cannot be charged direct to the cost of articles manufactured or work done are termed “On Cost”.

- **Types of On Cost :**
- 1.Proforma On Cost
- 2.General On Cost
- 3. Shop On Cost

1. PROFORMA ON COST

- -Includes all On cost which is not included in cost of work done in Railway Workshops, but which **would be included in commercial costing**. Items included in Proforma On Cost are :
- (a) Share of expense for the Rolling Stock management in Zonal Headquarters Office and Establishment in Offices of Mechanical Department of Workshops.
- (b) General Superintendence of all Service Departments such as Financial, Personnel and Material Management etc. including Officers and Office Establishment of Security Department and Medical Services.
- c) Contribution to Provident Fund in respect of non-pensionable staff. d) Gratuity and Special contribution to Provident Fund in respect of non-pensionable staff.
- e) Pension liabilities – Pensionable Staff.
- f) Payment under Workmen's Compensation Act. g)
- Depreciation of plant and buildings.
- h) Repairs of M&P other than those charged to cost of manufacture and repairs to buildings ,Yards etc.
- i) Cost of materials used and labour expended on the maintenance of Electric lighting throughout the Workshop,.

2. GENERAL ON COST

General On Cost denotes **c**ost other than Proforma on cost, that is incurred in **common with all the Shops or Departments in Workshop.**

- a)Leave, sick, hurt and Holiday pay paid to workshop employees whose wages are not charged to shops ie.

Yard Establishments.

- b)Wages, Overtime etc. of staff such as Workshop apprentices, Tool Keepers not attached to Shops.
- c)Freight charges that cannot be directly allocated to jobs.
- d)Electrical power which is not possible to allocate to shops.
- e)Hydraulic and Pneumatic power and gas that cannot be allocated to shops.
- f)Working expenses of Crane and shunting engines, lorries, autotrucks, traversers etc. provided for use of the workshop when not chargeable to Shop on cost.
- g)Water charges that cannot be allocated to shops.
- h)Experimental work when not appropriately charged directly to job itself.
- i)Yard Lighting.

3.SHOP ON COST

Shop on cost includes all on cost incurred within accounting unit, such as a shop or a department or a section. Items included are :

- a)Wages, Overtime etc of Workshop apprentices attached to shops, Chargemen , Mistries , unskilled labour except when employed as direct labour tally men, store men, Oilers , Shop Clerks etc.
- b)Shop scrap (credit) ie. scrap which cannot be allocated to job.
- c)Defective and spoilt work in the case of experimental work.
- d)Power charges whether electric , pneumatic, gas or Hydraulic which can be directly allocated to shops.
- e)Consumable stores for shop use viz oil for lubrication, sponge, emery / glass cloth, soap etc.
- f)Small tools for shop use.

Costing of a Component – Water Expansion Tank (Rear)

Sl.No	Raw Material	PL. No.	Quantity in Kg.	Rate (in Rs.) per Kg	Shop
1	3.15 mm. MS sheet	90525358	64.57	25.52	SMS (72 man-hour)
2	5 mm. MS sheet	90402443	34.28	62.59	BFS (2.17 man-hour)
3	40 mm. bore pipe	62986065	0.06	191.12	-
4	25 mm. bore pipe	62986089	0.40	89.37	-
5	15 mm. bore pipe	62986120	0.40	49.55	-

(i) Material Cost :

a) 3015 MS sheet

PL No = 90525358
Quantity = 64.57 Kg.
Rate = Rs.25.52, Total cost (in RS.) = 1647.83

b) 5 mm. MS sheet

PL No = 902443
Quantity =34.28 Kg.
Rate = Rs 62.59, Total cost (in RS.) = 2145.59

c) 40 mm bore pipe

PL No =62986065
Quantity =0.06 mtrs.
Rate = Rs.191.12, Total cost (in RS.) = 11.47

d) 25 mm bore pipe

PL No = 62986089
Quantity =0.40 mtrs.
Rate = Rs.89.37, Total cost (in RS.) = 35.75

e) 15 mm bore pipe

PL No = 62986120
Quantity =0.40 mtrs.
Rate = Rs.49.55, Total cost (in RS.) = 19.82

Total Material Cost = a) + b) + c) + d) + e)
= Rs 1647.83 + Rs.2145.59+ Rs. 1.47+ Rs. 35.75+ Rs.19.82
= Rs. 3860.45

(ii) Labour Cost :

a) Sheet Metal Shop(SMS)

Total man-hour = 72 man-hours
Hourly Rate = Rs 170.54, Total Cost = Rs 12278.88

b) Brass Finishing Shop (BFS)

Total man-hour = 2.17 man-hours
Hourly Rate = Rs 171.63, Total Cost = Rs 372.44

Total Labour Cost (DL) = a) + b)
= Rs 12278.88 + Rs 372.44
= Rs 12651. 32

(iii) Oncost

Sheet Metal Shop (SMS):

LOC = 30% of DL = Rs. 3683.664

SOC = 24% of DL = Rs. 2946.93

Shop Oncost = Rs. 3683.664 + Rs. 2946.93 = Rs 6630.60

GOC = 12% of DL = 12% of 12278.88 = 1473.47

Total Oncost = Rs 8104.07

Brass Finishing Shop(BFS)

LOC= 42% of DL = Rs. 156.42

SOC = 30% of DL = Rs. 111.73

Shop Oncost = Rs. 156.42 + Rs. 111.73 = Rs 268.15

GOC = 12% of DL = 12% of 213.31 = Rs 44.70

Total Oncost = Rs 312.85

Therefore, Estimated cost of the component

= Material cost + Labour cost + Oncost

= Rs. 3860.45 + Rs. 12651.32 + Rs 8104.07 + Rs 312.85

= Rs 24928.66

Workshop Manufacturing Suspense

- It is a Suspense Head of Account under Capital (7200). It is operated upon to accommodate expenses incurred on labour, material and on-cost charges expended on various jobs.

- The reconciliation of balances appearing in W.M.S. Account Current and those appearing under Workshop Manufacturing Suspense Account in the General Books (Finance Accounts) is effected to prove accuracy of the two records

- Expenditure incurred on jobs concerning manufacture and maintenance of Rolling Stock is debitable to Final Heads of Accounts.
- Expenditure incurred on jobs undertaken on behalf of Stores Department, other Home Line Department, other Railways and other Government Departments is transferable to their accounts.
- Expenditure on jobs undertaken on behalf of Public Bodies, Private Bodies, individuals and Railway employees is recoverable from them.
- These transfers or recoveries take effect only after the jobs are undertaken or delivered.
- Till Manufacturing activities are completed, expenditure incurred on raw material, labour and overheads is to be temporarily held under a Suspense Head of Account and cleared therefrom as soon as the job is completed or stores delivered.

Workshop Manufacturing Suspense

- Demand No: 16 Sub Head : 7210
- 7211 : Loco workshop
- 7212 : C&W workshop
- 7213 : Printing Press
- 7214 : engineering workshop
- 7215: S&T workshop
- 7216: Electric workshop
- 7217: others
- 7218: Wheel and axle plant

Managerial control

- These statements are prepared by Account office and put up to different level of Management :
  - 1) Utilization of Man hours.
  - 2) Statistics of Over-Time
  - 3) Incentive bonus Data
  - 4) Number and Cost of Staff
  - 5) Overhead expenditure.

Best use of Men, Machine & Materials:

- **(i)Best use of Men** - Assign appropriate person to a location in appropriate number.

- **(ii)Best use of Machine**
- •Machines should be optimally utilized with no idle time
- •Machines should be maintained as per the schedule
- •Machines should be in good working conditions
- •Machines should deliver products in minimum time with minimum wastage with accuracy

- (iii) **Best use of Material**
- ▪ Materials should be selected as per required specifications
- ▪ Materials should have good past record of performance
- ❖We should select a **best method of doing a work** so that a product can be finished in minimum time in minimum cost with desired quality

Thank you