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INTRODUCTION

Overheads are not related to a particular product but are related to entire production process. Overheads areindirect costs. As such, it is not possible to charge them specifically to cost units .Thus distribution of overheads is a problem.The process of linking overhead to cost unit i.e., distributing overheads involve following steps:

I. Collection and classification of overheads,
II. Departmentalisation of overheads, and
III. Absorption of Overheads.

I.Collection and Classification of Overheads

The first step is to classify the overheads in a systematic manner. After classification of overheads, it is useful to allot number of or symbol to each group of expenses so as to distinguish one from other. Such numbers or symbols are known as codes for overheads or standing overhead number.

Codification: Codification of overheads is a system of assigning code numbers to each headphones, subhead and category of expenses to facilitate the systematic and easy recording, accounting , summarisation of cost of data for assessment of cost, profitability and managerial decision making.

C.I.M.A,define coding as "a System of symbols designed to be applied to a classified set of items, to give a brief accurate reference facilitating and entry, collection and analysis.

Objects of Codification of Overheads

a) To accumulate overheads systematically.
b) To facilitate control over them.
c) To distinguish between different types of overheads.

Following method may be used to allot code numbers:

1. **Numerical Coding-** Under this method, each type of expenditure is allotted a fixed number, for example:

Indirect material 100
Indirect labour 200

2. **Mnemoric Method-**Under this method, alphabets are use as codes. For example

Repairs of factory building R.F.B
Insurance of office furniture. I.O.F

3. **Decimal Method:** Under this method, the whole number is allotted for the head of the expenditure or master group while decimals are allotted to primary and secondary items. Example, salary of clerks belonging to office

department is given a code number as 1.1. The salary of clerk belonging to selling department is given a code number as 2.1 and so an.

4. **Alpha numerical Method:** This method combines both the alphabetic and numerical methods . The alphabetic letter denotes the main expenditure while the numerical method denotes its sub division. For example, depreciation of plant is coded as D1 comma depreciation of plant and machinery is coded as D2 and appreciation of acids is coded as D3.

COLLECTION OF OVERHEADS: Overheads are regularly collected understanding order code Nos all allotted to them. It is necessary to allot suitable account heading for each types of overhead. This process helps in grouping similar items in a convenient banner for overheads are collected from the following documents.

- Invoice, • Stores requisition, •journal entries, • Cash book and petty cash book, •Subsidiary records like depreciation,scrap,waste,idle time etc.

II. **Departmentalisation of Overheads:** departmentalisation of overhead is the process of allocation an appointment of overhead to different department or cost centres.For smooth and efficient working a factory is subdivided into a number of departments, each of which denotes a particular activity of the factory e.g, purchase department, stores department, time keeping department, personal department,crushing department, melting shop, etc.

Objectives

a) **Control of overhead costs**
b) **Ensures greater accuracy in cost assortment**
c) **valuation of work -in- progress**
d) **cost of service departments**

<u>Allocation of Overheads</u>

The term 'allocation of Overheads' Refers to identifying an item of overhead and allotment of the whole amount to one department or cost centres.A point to be clearly understood is that allocation can be made only when exact amount of overhead incurred in a cost centre is definitely known. for example, rent cannot normally be allotted since rent is payable for the factory as a whole and the exact amount of rent for each Department cannot be known.

<u>Apportionment of Overheads</u>

Overhead cost which are common to a number of course centers or departments are distributed amongst various departments. Search distribution is known as apartment. 3rd, apartment may be defined as the*the allotment of proportion of items of a cost to cost centers or cost units.* **For example,** rent of the factory cannot be allocated , it is a apportioned to various departments on some equitable basis , that is in the ratio of area occupied.

Distinguish between allocation and a apportionment of overheads:

i. **Location deal with hold items of cost while apportion deal with proportion of item of cost.**
ii. allocation is a direct process but apportionment is a made indirectly. Suitable equitable bases are selected for apportionment.
iii. Under allocation, entire expenditure is charged to one Department while under apportionment and expenditure is charged too many departments on a suitable basis.

Principles of Apportionment

1. **Service Criterion-** It is based on the assumption that the services rendered to different departments can be easily measured.
2. **Ability to pay Principle-** This principle is applied where overheads are to be a portion to different Department or a product of which one of them happens to be a new line. According to this principle, the overheads are charged on what is term as ability to pay. That means those departments which earn more profit should be a highest share of overheads as compared to a new department or a product.
3. **Incentive principle-**Under this principle, production target is fixed for each Department and overheads are apportioned according to the target set . When the target are attained, the unit cost of production decreases with, which reveals the efficiency of the Department.
4. **Analysis Principle-** This principle is adopted where it is not possible to measure the services rendered directly because of its variation from time to time insert situation analysis is made to know the impact of overheads on different departments and accordingly a fair share of overheads are a portion to all departments.

Absorption of Overheads

This is the last step in accounting procedures of overheads. After all the overheads are apportioned from the service departments to production departments, it involves charging of production department overhead to the number of units produced in those department. The process of charging the overhead from cost centres to cost unit is known as absorption of method.

Difference between apartment and absorption

i. Apartment is a process of distribution of overheads among different departments while absorption is the process of charging overhead to cost units.
ii. Absorption take place only after appointment of overheads

iii. Ratios are used in apportionment overheads while percentage are used in absorption.

Methods of Absorption of Factory Overheads

1. **Percentage on Direct Material Cost-**Under this method, the amount of overheads to be absorbed by cost unit is determined by the cost of direct materials consumed in producing it. The rate is assortment by dividing the total overhead by the total cost of direct material consumed in the department and multiplied by 100. Thus,

$$Overhead\ Rate = \frac{Production/Factory\ \ Overhaeds}{Direct\ matarials\ consumed} \times 100$$

Suitability

- Where only one variety of product is manufactured.
- where the material used are common for different jobs or process or products.
- where the prices of raw materials remain stable.
- where material cost constitutes highest proportion total cost.

Advantages

- This method is simple and easy to operate because cost of direct materials is readily available and no additional call records are required to be maintained for this purpose.
- This method gives fairly accurate rates where material prices do not fluctuate widely and where output is uniform.

Disadvantages

- Most of the factory overheads are not directly related to direct material cost. so the method is not logically correct and hence gives misleading results.
- This method fails to take into account jobs performed by skilled and unskilled workers.A job which is performed by unskilled workers require more amount of overheads.This amount also failed to distinguish the job done by manual labour and machines.

2. **Direct labour cost percentage rate-** . This is the oldest method of overheads absorption and still it is more popularly used. Under this method, the overhead to be absorbed is divided by direct Labour cost and the question is expressed in the form of percentage

$$Overhead\ Rate = \frac{Production\ \ Overhaeds}{Direct\ Labour\ Cost} \times 100$$

Suitability

- Where labour cost from a high proportion to total cost of production.
- Where skill of Labour does not differ widely.
- where the wage rate does not fluctuate widely.

Advantages

- It is simple to understand and easy to operate.
- it gives stable results as Labour rates are more constant than material prices.

Disadvantages

- This method is not suitable, where machines are used at a great extent.
- no distinction is made between work done by skilled and skilled worker.
- As it ignore time factor, this method is not suitable in those industries where price piece rate system of wage payment is adopted.

3. **Prime Cost Percentage Rate:** This method is based on the assumption that both materials and Labour give rise to a factory overheads and thus total of two(i.e., material and labours should be taken as the base for absorption of factory overheads.

$$Overhead\ Rate = \frac{Factory\ \ Overhaeds}{Prime\ Cost} \times 100$$

Suitability

This method is suitable where direct materials cost and indirect Labour cost are equally important and overheads are related to both.

Advantages

- It is simple to understand and easy to operate.
- This method gives satisfactory result because it takes into account direct material cost and direct Labour cost.

Disadvantages

- Under this method, equal importance is given to both material cost and Labour cost, though most of the overheads are closely related to Labour cost.
- where material cost is predominant element of cost, this the matter ignore time factor.
- **Labour Hour Rate-** Under this method, overheads are absorbed on the basis of direct Labour hours worked . The overhead rate is obtained by dividing the overhead to be absorbed by the number of direct Labour hours.

$$Overhead\ Rate = \frac{Production\ Overhaeds}{Direct\ Labour\ Hours}$$

Suitability

This method is most suitable where manual Labour is engaged in the factory.

Advantages

- This method gives full recognition to the time factor.
- this method gives accurate results.

Disadvantages

- This method requires additional clerical work and separate records are necessary for recording direct Labour hours.
- method is not desirable where machines are used to a great extent.

4. **Machine Hour Rate: .** This method refers to the overheads incurred for running machine for one hour for stop the rate is a certain by dividing the amount of factory overhead a portion to a machine by the number of machine are for the concern period.

$$Machine\ Hour\ rate = \frac{Factory\ \ Overhaeds}{No.of\ Machine\ Hours}$$

Suitability

This method is most suited where basin's are huge Provident Lee for production purpose

Advantages

- This is most center common accurate and logical method of overhead absorption.
- it help in comparing the efficiency and cost of operating different machines.
- it helped management in choosing between manual Labour and machines.

Disadvantages

- This method is not suitable in manual Labour based factories
- it involves maintenance of addition records for noting down the machines are operated.

5. **Rate per unit of output**
   under this method, overheads are absorbed on the basis of units produced. The overheads absorption rate is obtained by dividing the overhead to be observed by the number of units produced.

$$Overhead\ Rate = \frac{Overhaeds\ to\ be\ absorbed}{No.of\ units\ produced}$$

Suitability

This method is suitable where the finish goods are identical in nature

Advantages

- It is simplest method among all the methods

Disadvantages

- This product is not suitable we are different varieties of finished products are manufactured.

Absorption of Office and Administrative Overheads

Office and administration overheads refers to the cost of formulating the policy, directing the organisation and controlling the operation of an undertaking. They pertain to the management and office administration of the business enterprises. Office and administration overheads consists of indirect materials, indirect labour and indirect expenses.

Following are the main method or basis of absorption of office & administration overheads:

1. **As a percentage of Factory Cost or Work Cost :**

$$\textit{Office \& Administrative Overheads Rate} = \frac{\textbf{Total Office} \ \& \ \textit{Aministrative Overhaeds}}{\textbf{Total Work Cost}} \times 100$$

2. **As a percentage of Factory Overheads :**

$$\textit{Office \& Administrative Overheads rate} = \frac{\textbf{Total Office} \ \& \ \textit{Aministrative Overhaeds}}{\textbf{Total Factory Overheads}} \times 100$$

3. **As a percentage of Sales :**

$$\textit{Office \& Administrative Overheads Rate} = \frac{\textbf{Total Office} \ \& \ \textit{Aministrative Overhaeds}}{\textbf{Sales}} \times 100$$

4. **As a percentage of Conversion Cost :**

$$\textit{Office \& Administrative Overheads Rate} = \frac{\textbf{Total Office} \ \& \ \textit{Aministrative Overhaeds}}{\textbf{Cost of Conversion}}$$

$$\textit{Cost of Conversion} = \textit{Direct Labour} + \textit{Direct Expenses} + \textit{Factory overheads}$$

5. **As a Cost per Unit Produced :**

$$\textit{Office \& Administrative Overheads Rate} = \frac{\textbf{Total Office} \ \& \ \textit{Aministrative Overhaeds}}{\textbf{No.of Unit Produced}}$$

Absorption of Selling and Distribution Overheads

Selling and distribution overheads relate to the expenses incurred for marketing of products . Following are the various methods for absorption of selling and distribution overheads:

a) **On the basis of Per Unit or output:**This method is employed when the company is selling one uniform type of product.

$$\textit{Selling and Distribution Overhead Rate} = \frac{\textbf{Total Selling and Distribution Overhaeds}}{\textbf{No.of Units Sold}}$$

b) **On the basis of Works Cost:** In this method, a percentage of selling and distribution overheads to work cost is ascertained and is applied for the absorption of selling and distribution overheads.

$$\textit{Selling and Distribution Overhead Rate} = \frac{\textbf{Total Selling and Distribution Overhaeds}}{\textbf{Total Factory Cost}} \times 100$$

c) **On the basis of Percentage on Sales:** This method is used when the enterprise is selling more than one type of product.

$$\textit{Selling and Distribution Overhead Rate} = \frac{\textbf{Total Selling and Distribution Overhaeds}}{\textbf{Total Sales}} \times 100$$

Over absorption: When actual overhead incurred are more than the overheads absorbed, it is known as under-absorption . Thus,

Under-absorption =Actual Overheads-Absorbed Overheads

Over- absorption: When actual overhead incurred are less than the overheads absorbed, it is known as over absorption. Thus,

Over-absorption = Absorbed Overheads-Actual Overheads

Reason for Under-absorption or Over-absorption of Overheads:

- Error in estimating the amount of overhead.
- error in estimating the Labour of production or hours to be worked.
- changes in the methods or techniques of production.
- changes in productivity capacity.

Treatment of Over-absorption or Under-absorption of Overheads

1) **Transfer to costing Profit and Loss Account:** The amount of under absorbed or over absorbed overhead is transferred to costing profit and loss account at the end of accounting period.
2) **Carry Forward to the Next Year:** The amount of under-absorbed or over-absorbed overheads is carried over to subsequent years when management is sure that the balance would to wiped out in the course of time.
3) **Use of Supplementary Rates:**The cost of the cost unit is adjusted by supplementary overheads rate. Supplementary over rate is calculated by dividing the amount of over absorption or understand by the actual base.

Short Questions

1) Define over-absorption and under- absorption of overheads.
2) What do you understand by allocation and absorption of costs ?

Long Question

1) Describe the various methods of apartment factory overhead. Which of these method you do you consider more scientific and why ?

Reference

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Thank you