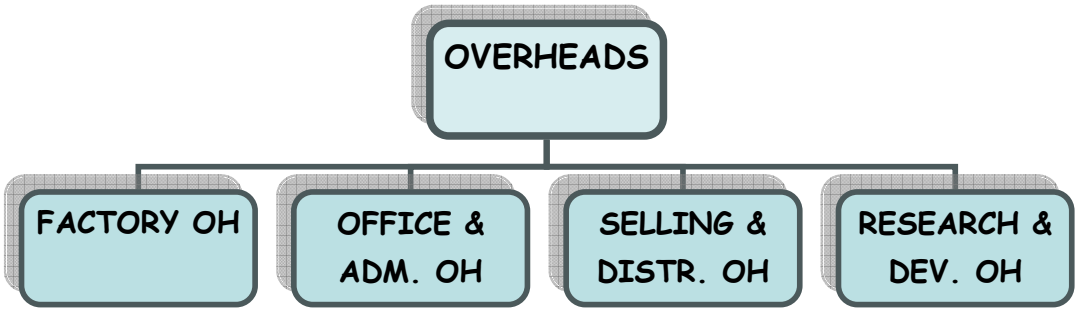
OVERHEADS

The total of all Indirect Costs viz.

- Indirect Materials,
- Indirect Labour and
- Indirect Expenses are collectively called as **"Overheads"**

Expenses that cannot be conveniently traced to or identified with the articles produced or services provided. Such expenses are incurred **for output generally** and **not for a particular** work order *e.g.,* wages paid to watch and ward staff, heating and lighting expenses of factory etc. **Expenses of these natures are known as overhead or indirect expenses.**



ALLOCATION OF OVERHEADS

According to ICMA terminology: " the allotment of whole items of cost to cost centres or cost units", is known as allocation.

Allocation refers to assignment or allotment of an entire item of cost to a particular cost unit. the allotment of the whole, undivided items of expense to a particular department or cost centre.

For example. –

- IF a separate power meter has been installed for a department, the entire power cost ascertained from the meter is allocated to that department only.
- In the same way cost of maintaining and repairing plant and machinery located in a particular department is allocated to that department.

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Allocated overheads thus satisfy **two conditions :**

(i) ***The allocated costs should have been exclusive caused by that department or cost centre***

e.g. salary paid to the manager of a particular de4partment, salary of an engineer working in a particular department, and

(ii) ***The exact amount of cost incurred in a department is known*** and the whole of that amount is charged to that department.
These overheads can also be called ***traceable overheads*** because these are traced to specific department.

COST APPORTIONMENT

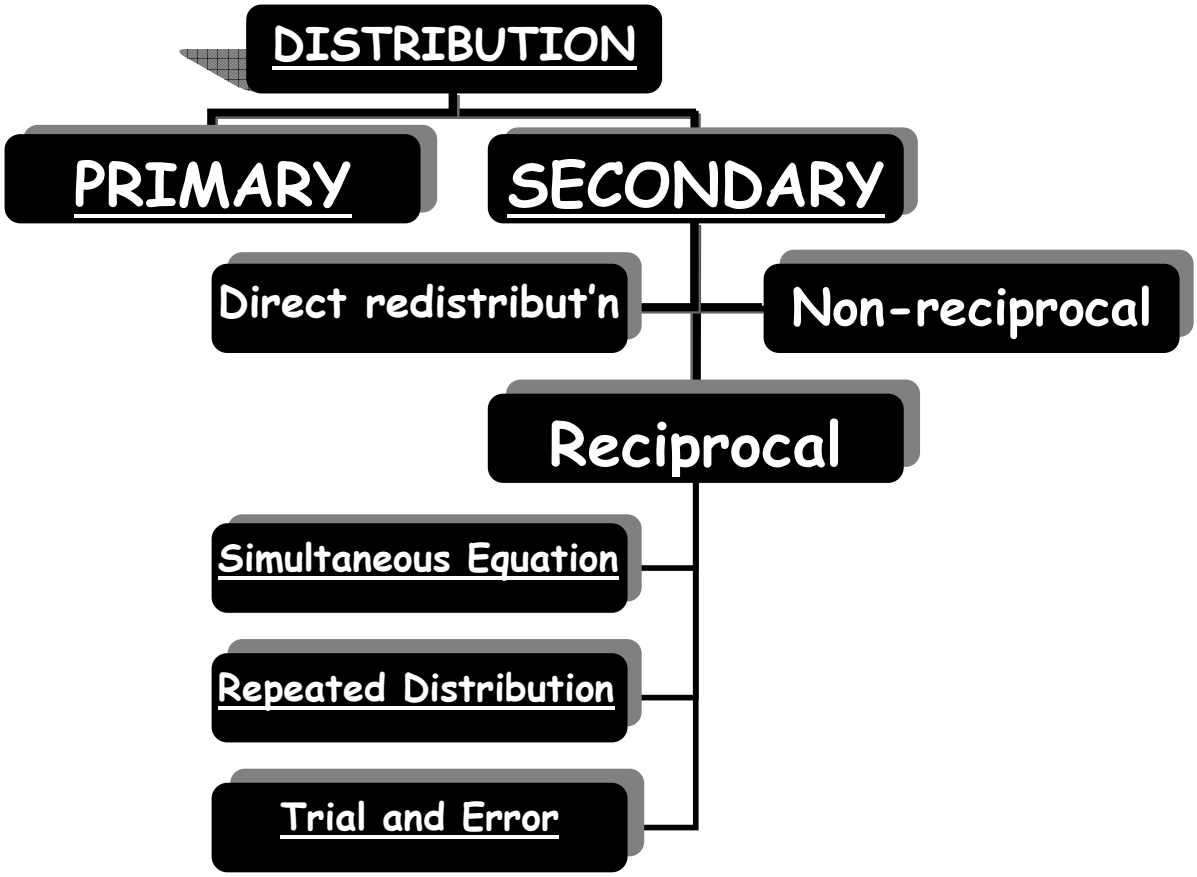
Those overheads which cannot be wholly identified with any particular cost centre need to be distributed to cost centres, such as, machines or departments. Distribution of overheads to cost centres ***on appropriate bases*** is called apportionment of overheads.

1. It involves charging to cost centres a fair share of overheads which are common to a number of cost centres. *For example*, rent paid by an organization may be charged to different departments in the ration of area occupied by those departments. This is an example of apportionment of rent.
2. Only those overheads are apportioned which are not wholly and exclusively incurred for a particular department.
3. Each cost centre bears only a portion of apportionable overheads.
4. Apportionment is the process of distribution of overheads to cost centres on an estimated basis.

Allocation vs. Apportionment

Particulars	Allocation	Apportionment
1. **Meaning**	Identifying a cost centre and charging its expense in full.	Allotment of proportions of common cost to various cost centres.
2. **Nature of Expenses**	Specific and Identifiable	General and Common

3. **Number of Depts.**	One	Many
4. **Amount of OH**	Charged in Full	Charged in Proportions



Primary Distribution

The process of *initial* distribution to production and service departments is known as Primary Distribution.

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Each overhead cost is to be apportioned to all departments, both production and service departments or other cost centres on an appropriate basis. The

basis to be considered appropriate or suitable should **satisfy the following conditions** :

1. The overhead cost to be incurred should be measurable by the **basis** adopted.
2. For achieving the above, there should be some **relationship** between the overhead cost and the basis.
3. The basis should be **practicable**,
4. The cost of apportionment should be **reasonable**.

The following are the **common bases** for apportionment of production overheads.

1. ***Direct Allocation*** **-** Overheads exclusively pre-training to a department are charged to that department, *e.g.*, salary of departmental manager, power when the department has separate power meter.
2. ***Direct Material*** **-**Cost of indirect materials and miscellaneous expenses if direct material cost is a dominant element in total cost, may be apportioned in the ratio of direct6 material cost incurred in different departments.
3. ***Direct Labour/Wages*****-** Employer's contribution to employees provident fund or employee insurance or workmen compensation costs may be distributed in the ratio of direct labour cost of various departments. In case direct labour cost is a ;major element in total cost, miscellaneous expenses may also be apportioned on this basis.
4. ***Number of Workers*** **-** Supervision cost, canteen subsidy and other employee welfare expenses may be apportioned in the ratio of number of employees working in different departments.
5. ***Direct Labour Hours*** **-** In case production is labour intensive and no other specific appropriate base is available for apportioning an overhead cost, direct labour hour is the most suitable basis.
6. ***Machine Hours*** In case production process is mechanized and no other specific appropriate base is available for apportioning a particular overhead, machine hours is the most suitable basis.

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7. ***Floor Area Overheads*,-** such as, rent, rates and taxes on building, building repair and maintenance, lighting, heating and air-conditioning may be apportioned in the ratio of effective floor area of different departments.
8. ***Light Points- Cost*** of lighting may be distributed on the basis of number of light points in different departments, otherwise on the basis of floor area.
9. ***Value of Assets-*** In case depreciation is considered as fixed cost, it may be charged to different departments in the ratio of capital value of plant and machinery in departments. Repair and maintenance of plant and machinery is also to be distributed on this basis.
10. ***Value of Machines x Hours Worked*** - In case depreciation is treated as variable cost then it should be distributed in the ratio of 'Value of plant and machinery x Hours worked' in different department. *For example* A has plant worth Rs. 10,00,000 and works for 10 hours per day and Department B has plant worth Rs. 20,00,000 and works for 8 hours daily, the ratio for distributing depreciation cost should be 10,00,000 x 10:20,00,000 x 8, *Le*., 10:16.
11. ***Horse Power*** - Cost of power is charged to different cost centres in the ratio of horse power of plant and machinery installed.
12. ***Horse Power x Hours Worked*** -In case different departments have worked for different number of hours, the power cost may be distributed to these departments in the ratio of horse power x hours worked'.
13. ***Number of Material Requisitions*** - Overhead costs on account of stores and material handling may be apportioned in the ratio of number of material requisitions by departments.
14. ***Hours Worked*** -Crane expenses may be charged to different departments on the basis of number of hours it had worked in different departments. In the same way supervisor's salary may be distributed in the ratio of number of hours he worked in departments, provided such information is available.
15. ***Technical Estimates*** - In case an appropriate basis is not available for apportioning certain overheads, the distribution is done on the basis of technical estimate regarding the share of overhead cost chargeable to different departments.

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Basis for apportionment of various overhead costs is given in the form of a table below

Overhead Costs	Bases of Apportionment
1. Rent	Floor area
2. Repair and maintenance of building	Floor area
3. Heating and lighting	Floor area
4. Air conditioning	Floor area
5. Indirect material	Direct material
6. Depreciation	Asset value
7. Insurance	Asset value
8. Repair and maintenance of plant	Asset value
9. Depreciation on Plant and Machinery	Value of Plant and Machinery or Value of Plant x Hours worked
10. General machine expenses	-do-
11. Power	Horse Power of Machine, or H.P. x Hours worked
12. Light expenses order	Wattage or light point or area,
13. Supervision	Number of workers
14. Time keeping	Number of workers
15. Canteen expenses	Number of workers
16. Employee welfare expenses	Number of workers
17. Personnel overheads	Number of workers
18. Creche expenses	Number of female workers
19. Indirect Labour	Direct Labour/Wage Bill
20. Employer's contribution to P.F. and E.S.I.	Direct Labour/Wage Bill
21. Leave with pay	Direct Labour/Wage Bill
22. Gratuities	Direct Labour/Wage Bill
23. Workmen compensation	Direct Labour/Wage Bill
24. Stores overheads	Number of material requisitions
25. Material handing Costs	Weigh of materials or volume or Number of boxes or value of material or No. of material requisitions.
26. Misc. expenses	Direct labour or Direct material cost
27. Crane expenses	No. of hours crane worked in departments
28. General overheads	Direct Labour or Labour hours or Machine hours
29. Internal transport	Technical estimate
30. Managerial salaries	Technical estimate

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Secondary distribution

(Re-apportionment of service department costs)

Under primary distribution all overheads are allocated and apportioned to all the departments—**both production and service departments**.

1. Service departments do not produce products for sale but they help production departments to produce.
2. They indirectly contribute to production. Therefore, overheads of service departments are to be shared by production departments on the basis of the benefit they derive from service departments.
3. The process of assigning service department overheads to production departments is called the process of reassignment or re-apportionment of overheads or **secondary distribution**.

The common basis of reapportionment of service department overheads to production

Service Department	Basis of Apportionment
1. Stores Department	No. of material requisitions/Value of Direct Material
2. Personal Department	No. of employees
3. Purchase Department	Value of materials purchased or No. of purchase orders
4. Welfare Department	No. of employees
5. Mess Department subsidy	No. of employees
6. Time-keeping and Payroll Department	No. of employees
7. Estate Department	Floor area or No. of hours worked in departments
8. Internal transport	Weight, volume or value of materials handled
9. Boiler House	Cubic feet of steam supplied
10. Power House	Horse power of plant and machine or wattage
11. Fire protection service	Value of assets
12. External transport	Tonne-miles, truck-miles, no. of packages
13. Tool-room expenses	Direct labour hours
14. Inspection expenses	Hours spent on inspection or value of output

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Methods of reapportionment or re-distribution

Re-apportionment of overheads of service departments to production departments can be done according to the following methods :

(a) Direct Re-distribution Method
(b) Step Distribution Method
(c) Reciprocal Service Methods :
  (i) Simultaneous Equation Methods
  (ii) Repeated Distribution Method
  (iii) Trial and Error Method

(a) Direct Re-distribution Method

Under this method overheads of service departments are directly apportioned to production departments totally ignoring the services rendered by one service department to another service department.

For example –

An organization has Radio Department, Television Department, Transistor Department, Stores Department and Personnel Department Under direct re-distribution method. Overheads of Stores will be apportioned to Radio, Television and Transistor departments only and that of Personnel also will be apportioned to these three production departments on appropriate basis. Stores will not share overheads of Personnel Department and Personnel Department will not share overheads of Stores.

Features-

1. The method is simple involving less calculation.
2. It gives only a very approximate re-distribution.
3. It is unscientific. It fails to give total overhead cost of operating different service departments.
4. The method fails to offer sound basis for budgeting, controlling overheads and determining accurate overhead absorption rates.
5. However, the method can be used by small organizations where service departments costs are also relatively small.

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(b) Non-reciprocal basis (Graded Distribution Method or Step Ladder Method)

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This method involves apportionment of overheads of service departments to other service departments on *non-reciprocal basis.*

1. Under this method service departments are arranged in the descending order of number of departments to which they render service.

2. **First of all, overhead cost of that service department is apportioned to other departments (including both production and service departments) which is rendering service to largest number of departments. Next, the overhead cost of service department which is rendering service to second largest number of departments is apportioned to remaining departments, excluding the first one**.

3. At the end, overheads of the last service department (which is the least serviceable department) are apportioned to production departments only.

(c) Reciprocal Service Methods

1. These methods are used when different service departments render **services to each other**, in addition to rendering services to production departments.

2. Thus various service departments are mutually dependent.

3. ***For example***- Mess Department is feeding the employees of Stores Department and Stores is rendering storage and issue facilities to Mess also. In such cases various service departments have to share overheads of each other to determine the total overhead cost of each service department.

Such redistribution on reciprocal basis may be done with the help of -

I.**simultaneous equations** or ,

II.**repeated distribution** or ,

III.**trial and error** method.

(I) Simultaneous Equation Method

1. The problem in case of reciprocal services is that total overheads of service Department X includes a share from the total overheads of service Deptt. Y.
2. Therefore to ascertain total overheads of X we should know total overheads of Y and to ascertain total overheads of Y we should know total overheads of X.
3. This problem is solved with the help of simultaneous equations.
4. Total overheads of each service department are ascertained with the help of simultaneous equations and then the overheads so ascertained are re-distributed to production departments on the basis of given percentage share pre-determined by technical estimates.

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5. If the percentage share for re-distribution is not given, such re-distribution can be done on appropriate basis, *e.g.*, overheads of stores department may be re-distributed on the basis of number of material requisitions and that of time keeping department on the basis of number of employees.

(II) **Repeated Distribution Method**

a) Under this method overheads ascertained as per primary distribution are arranged in one row and then overheads of service departments are distributed and redistributed to all departments till the overheads in service department become negligible. At this stage overhead of service department is distributed to production departments only.
b) The Repeated Distribution Method will give approximately some apportionment as obtained from Simultaneous Equation Method.
c) Repeated Distribution Method is suitable where the reciprocal share of service departments is relatively small.

(III) Trial and error method

a) Under this method the cost of first service department is apportioned to other service department only at a given percentage.
b) The cost of the second service department is then apportioned to the first service department.
c) The process is repeated till the cost of a service department requiring apportionment becomes negligible.
d) Total of overheads of each service department as per primary distribution plus overheads apportioned in different stages gives total overheads of each service department.

List some common expenses and the methods of apportioning the same. RTP

Common Expense	Basis of Apportionment
1. Rent / Maintenance / Insurance on Building	Floor Space
2. Factory Lighting Expenses	Number of Light Points or Floor Space
3. Depreciation and Insurance of Assets	Value of Assets
4. Power for machines	HP Rating or (HP Rating x Machine Hours operated)

5. Indirect Wages	Direct Wages
6. Supervision	Time Spent or Number of Employees or Direct Wages
7. Material Handling Expenses	Value of Materials consumed
8. Purchase Department Expenses	Number of Purchase Orders or Value of Purchases
9. Miscellaneous Production Expenses	Direct Wages
10. General Administration Expenses	Works Cost

COST ABSORPTION

After completing the distribution ,the overheads charged to department are to be recovered ***from the output produced*** in respective departments.
This process of recovering overheads of a department or any other cost center from its output is called recovery or absorption. The overhead expenses can be absorbed by estimating the overhead expenses and then working out an **absorption rate**. When overheads are estimated,their absorption is carried out by adopting a pre-determined overhead absorption rate.

In other words,

It is the process of absorbing all overhead costs allocated to or apportioned over particular cost centre or production department **by the units produced**;

- For example ,the manufacturing cost of lathe centre is absorbed by a rate per lathe hour.
- Manufacturing costs of groundnut crushing centre can be absorbed by using a Kg. of groundnut oil produced as the basis.
- The purpose behind the absorption is that expenses should be absorbed in the cost of the output of the given period. For overhead absorption some suitable basis has to be adopted.

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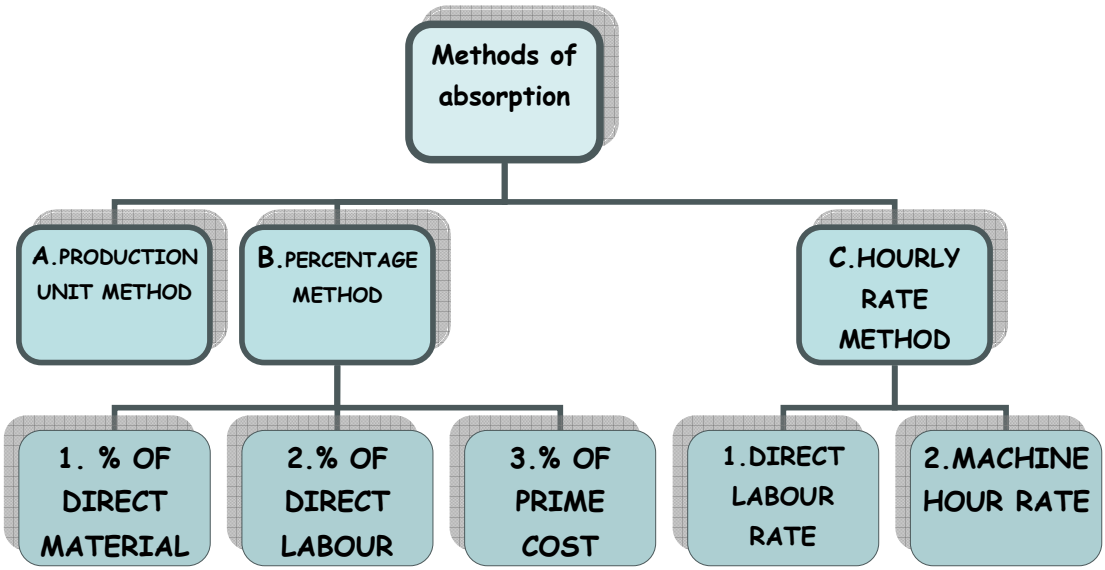
Methods of absorption ('PRE-DETERMINED RATE OF RECOVERY OF OVERHEADS')



A. Production unit method:

To absorb the overhead costs by this method either a pre-determined or actual rate of overhead absorption is calculated, by dividing the cost to be absorbed by the number of units produced or expected to be produced. This method is the simplest one. But its usefulness is limited normally to those situations where only one product is produced.

$$\frac{Expected\ (or\ Actual)\ Overhead}{Expected\ (or\ Actual)\ No.ofunitsproduced}$$

B.Percentage method:

1. Percentage of direct material cost method

Under this method, overheads are recovered on the basis of a pre-determined or actual rate, which is computed as follow:-

$$\frac{\text{Expected (or Actual) Overhead}}{\text{Expected (or Actual) direct material cost}} \times 100$$

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This method is not used commonly because of the following limitations:

1. Material prices fluctuate quite often and this phenomenon leads to high or low charges in respect of overhead, even though overheads figures remain unchanged. This vitiates comparison of cost of production from period to period

2. Most of the overhead expenses vary with time. Thus, a job requiring cheap materials but longer period of processing should bear more for overheads as compared to a job which necessitates expensive materials but shorter period of processing. But the use of direct material cost bases totally ignores the time considerations.

2. Percentage of direct wage method

This method is similar to the previous one except that here direct wages are taken for ascertaining the recovery rate.

$$\frac{Expected\ (or\ Actual)\ Overhead}{Expected\ (or\ Actual)\ direct\ Labour\ cost}$$

It is useful where production is uniform, all the workers employed earn more or less the same hourly rate and labour is predominant. The main advantages of this method are:

(1) It is simple to operate and understand.

(2) It given consideration to time element.

(3) Labour rates fluctuate less frequently than the rate of materials.

The application of the direct wage method does not give correct results under the following conditions:

(a) Where major work is done by machines and the workers merely act as attendants.

(b) Where same work is done on different jobs by workers with different rate of pay and also the highly paid workers cannot increase their output/input ratio. In such a case if, overhead is recovered on the basis of direct wages it will not only cost more in labour but also involve large share of overhead expenses as compared to those performed by low paid workers. But in fact highly paid workers take less time and therefore make use of less resources, supplies etc., so that share of overhead should be rather less.

3.Percentage of prime cost method:

This method is infact a combination of direct material and the direct wage cost basis.

The rate of absorption here is calculated by using the following formula:

$$\frac{\text{Total overhead cost}}{\text{Total prime cost}} \times 100$$

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This method is very simple and takes into account both material and labour costs to calculate rate of absorption. The main disadvantage of using this method is that it givens equal weightage to both material and labour.

C. Hourly rate method

1.Direct labour hour rate.

$$\frac{Expected\ (or\ Actual)\ Overhead}{Expected\ (or\ Actual)\ direct\ Labour\ Hours}$$

This is the most equitable method of charging the manufacturing overhead to production where labour hours are the most important element of cost. Under this method, labour hours are taken as a basis for the overhead absorption. It can be calculated by dividing the overheads to be absorbed by the labour hours expended or expected to be expended. To operate this method successfully additional records of labour must be maintained to get the number of direct labour hours by departments and product.

The labour hour rate can be adopted under the following circumstances:

(a) Where production is not uniform and, where a percentage method would not give accurate results.

(b) Where labour is the main factor of production.

2.Machine hour rate:

$$\frac{Expected\ (or\ Actual)\ Overhead}{Expected\ (or\ Actual)\ Machine\ hours}$$

This is one of the most scientific methods for the absorption of factory overheads. Machine hour rate means the cost or expenses incurred in running a machine for one hour. This rate is calculated by dividing the amount of factory overheads concerning a machine the number of machine hours.

It is difficult to name a single method which is suitable for the absorption of overhead costs under different circumstances. However, direct labour hour rate or machine hour rate are considered as best methods specially in those very manufacturing units in which labour or machine is a predominant factor.

Under/Over Absorption Of Production Overhead

Production Overheads are usually applied to production on the basis of pre-determined rates .The pre-determined rates may be based on **estimated costs**. The amount of expenses actually incurred and the amount of overhead applied to production will seldom be the same. Some difference is inevitable.

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If the **actual expenses fall short** of the amount **applied to production**, there is said to be an **over** absorption of production overheads. If the **actual expenses exceeds** the amount applied to production, there is a case of **under** absorption.

The under/over absorption of overheads arise due to the following reasons:

(1) Error in estimating overhead expenses.
(2) Error in estimating the level of production.
(3) Unanticipated changes in methods of production.
(4) Seasonal fluctuations in the overhead expenses from period to period.

Accounting treatment of Under-absorption of Production Overheads

Under and over absorbed overheads can be disposed off in Cost Accounts by using any one of the following methods:

- **Use of Supplementary Rates** *:*

This method is used to adjust the difference between overheads absorbed and overheads actually incurred by computing supplementary overhead rates. Such rates may be either positive or negative. A positive rate is intended to add the unabsorbed overheads to the cost of production. The negative rate, however, corrects the cost of production by deducting the amount of over-absorbed overheads. The effect of applying such a rate is to make the actual overhead get completely absorbed.

Supplementary Rates= $\frac{Under/overabsorbed\ Overhead}{no.ofunitsproduced}$

- **Writing off to Costing Profit & Loss Account :**

When under or over absorbed amount of **overheads is quite negligible** and it is not felt worth while to absorb it by using supplementary rate, the said amount is transferred to Costing Profit & Loss Account. In case under absorption of overheads arises due to factors like idle capacity, defective planning etc. then also it may be transferred to Costing Profit & Loss Account.

- **Carrying over to the next year's account** *:*

Under this method, the amount of over/under absorbed overhead is carried over to the next period. This method is not considered desirable as it allows costs of one period to affect cost of another period. Further, comparison between one period and another is rendered difficult. Therefore, this method is not considered proper and has only a limited application. However, this method may be used when the normal business cycle extends over more than one year, or in the case of a new project, the output is low in the initial years.

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TYPES OF OVERHEAD RATES

Normal overhead rate-This rate is calculated by dividing the actual overheads by actual base. It is also known as actual rate.

It is calculated by the following formula:

$$\frac{Overhead}{actualbase}$$

Blanket overhead rate

Blanket overhead rate is one single overhead absorption rate for the whole factory.

It may be computed by using the following formulae:

$$\text{Blanket overhead rate} = \frac{Overhead\ costs\ for\ the\ whole\ factory}{*Total\ units\ of\ the\ selected\ base}$$

* **The selected base can be the total output; total labour hours; machine hours etc.**

Situation for using blanket rate:

The use of blanket rate may be considered appropriate for factories which produce only one major product on a continuous basis. It may also be used in those units in which all products utilise same amount of time in each department. If such conditions do not exist, the use of blanket rate will give misleading results in the determination of the production cost , specially when such a cost ascertainment is carried out for giving quotations and tenders.

Blanket rate should be applied in the following cases

(1) Where only one major product is being produced.(2) Where several products are produced, but

(a) All products pass through all departments; and

(b) All products are processed for the same length of time in each department.

Where these conditions do not exist, departmental rates should be used

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Departmental overhead rate

- Where the product lines are varied or machinery is used to a varying degree in the different departments, that is, where conditions throughout the factory are not uniform, the use of departmental rates is to be preferred.
- The working condition in the last mentioned case would be such that varying amount of expenses would be continuallyincurred by the several service departments and hence, the incidence of overhead cost of each department would be different.
- Since not all products would ordinarily undergo the same type or of different type of operations in different departments, the charging of a single overhead rate in such a case would give misleading results.

This overhead rate is determined

$$= \frac{Overhead\ \cos ts\ for\ the\ department}{*Total\ units\ of\ the\ selected\ base}$$

*** The selected base can be the total output; total labour hours; machine hours etc.**

Single and Multiple Overhead Rates

Single overhead rate: It is one single overhead absorption rate for the whole factory.

It may be computed as follows:

$$\text{Single overhead rate} = \frac{\text{Overhead costs for the entire factory}}{\text{Total quantity of the base selected}}$$

The base can be total output, total labour hours, total machine hours, etc.

The single overhead rate may be applied in factories which produces only one major product on a continuous basis. It may also be used in factories where the work performed in each department is fairly uniform and standardized.

Multiple overhead rate: It involves computation of separate rates for each production department, service department, cost center and each product for both fixed and variable overheads. It may be computed as follows:

Multiple overhead rate

$$= \frac{\text{Overhead allocated/appportioned to each department/cost centre or product}}{\text{Corresponding base}}$$

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Under multiple overhead rates, jobs or products are charged with varying amount of factory overheads depending on the type and number of departments through which they pass. However, the number of overhead rates which a firm may compute would depend upon two opposing factors viz. the degree of accuracy desired and the clerical cost involved.

CONCEPTS RELATED TO CAPACITY

1. Rated Capacity/ maximum possible/ Installed Capacity/ Theoretical Capacity

a) Rated Capacity refers to the maximum possible productive capacity of a machine or a plant as indicated by its manufacturer.
b) The rated capacity can never be achieved due to avoidable and unavoidable losses in operating time of a plant .

2.Practical Capacity/ Operating Capacity / Net Capacity / Available Capacity

a) This capacity takes into account loss of time due to repairs, maintenance, minor breakdown, idle time, set up time, normal delays, Sundays and holidays, stock taking etc.
b) Practical Capacity = Rated Capacity *less* Normal Time Loss .
c) It is also used as a base for determining overhead rates.

3. Normal Capacity

a) It is the capacity of a plant, which is expected to be utilised over a long period based on sales expectancy.
b) The determination of this capacity considers the average utilisation of plant capacity during one full business cycle that may **extend over 2 to 3** years.
c) It is also known as **Average Capacity** and is used to compute overhead recovery rate.
d) Sometimes, it is also called as **Capacity based on sales expectancy**.

Normal Capacity or Capacity based on Sales Expectancy = $\frac{\text{Normal Sales volume in units}}{\text{Processing time per unit.}}$

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4.Actual Capacity

a) It is the capacity actually achieved during a given period.
b) It is denoted by the actual operating hours during a particular period.
c) This capacity may lie between practical capacity and capacity based on sales

expectancy.

5. Idle capacity

A. Meaning

1. It is that part of the practical capacity which cannot be utilised due to-
    a. lack of demand,
    b. non availability of materials,
    c. absenteeism of skilled labour,
    d. shortage of power, fuel or supplies, seasonal nature of product and
    e. lower sales expectancy.
2. Idle capacity in fact is the difference between the **practical capacity and the capacity based on sales expectancy**.
3. In brief, idle capacity is unused capacity of a plant, equipment or department which cannot be used gainfully.
4. **It usually arises due to factors which the management of a business concern considers beyond its control.**

B. Costs associated with Idle capacity

Idle Capacity Costs: Costs associated with idle capacity are mostly fixed in nature. These include depreciation, repairs and maintenance charges, insurance premium, rent, rates, management and supervisory costs. These costs remain unabsorbed or unrecovered due to under-utilisation of plant and service capacity. Idle capacity cost can be calculated as follows:-

$$\text{Idle capacity cost} = \frac{\text{Aggregate overhead related to plant}}{\text{Normal plant capacity}} \times \text{Idle Capacity}$$

C. Treatment of Idle capacity cost

Idle capacity costs can be treated in product costing, in the following ways :

(a) If the idle capacity cost is due to **unavoidable reasons** such as

- repairs,maintenance,
- change over of job etc.,

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➡ **a supplementary overhead rate may** be used to recover the idle capacity cost. In this case, the ***costs are charged to the production capacity utilised.***

(b) If the idle capacity cost is due to **avoidable reasons** such as
- faulty planning,
- power failure etc.;

➡ ***the cost should be charged to profit and loss account.***

(c) If the idle capacity cost is due to **seasonal factors**,

➡ ***the cost should be charged to the cost of production by inflating overhead rates***.

Idle facility

A. Facilities may be provided by fixed assets such as
   - building space,
   - plants equipment capacity, etc. or

B. Facilities may be provided by various service functions such as
   - material services,
   - production services,
   - personal services etc.

If a firm **fails to make full use of the facilities of its disposal, the firm may be said to have idle facilities.**

Thus idle facilities refer to that part of total facilities which remains unutilised due to any reason such as non-availability of raw material, power, lack of demand etc.

In Cost Accounting idle facilities are treated in the same way as those of idle capacity.

Treatment of Certain Items in Costing

A. Interest on borrowings:

There is a wide difference of opinion among accountants about the treatment of interest on borrowing in cost accounts. Some favour its inclusion in the Cost Accounts, while others hold that interest, being a financial charge, should not be included in Cost Accounts.

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➡ ***The supporters of interest inclusion give the following argument*:**

(1) ***Element of cost:*** Computation of total cost is impossible unless interest is taken into account. Interest is an element of cost and therefore, should be included in cost. This is specially true in business where raw materials in different stages can be used. Thus a timber merchant, if he buys standing trees and seasons the timber himself, would incur a large amount of costs as interest. Another merchant who buys his timber already

seasoned would automatically have to pay a higher price; obviously, this price includes interest.

(2) ***Part of Cost of capital:*** Interest is the cost to be paid for the use of capital; capital is also a factor of production just as labour. Thus, if wages are included in cost of production, why not interest ?

(3) ***Hepls in managerial decision making:***If interest is not included in cost calculation, a number of managerial decisions may be taken wrongly. Thus, where a decision involves replacement of labour with expensive machinery, the question of interest assumes importance, since, if interest is not included, the cost accountant may conclude that machinery is cheaper.

(4) ***Helps in comparison:***Inclusion of interest also allows comparison of profit on different jobs. Thus, if a job takes 3 months and another takes 6 months the cost of the jobs must include a charge by way of interest before profit can be compared.

(5) ***Part of Inventory Cost:***In inventory control, interest is an important item to be considered. Where large stocks are kept, the advantage of one time purchase is offset by increase in interest charges.

(6) ***Important element of cost plus contracts:*** While submitting tenders for cost *plus* contracts,etc., interest must be taken into account.

However, many cost accountants argue that interest should not be included in cost accounts since it is not an item of cost and would vary with different methods of financing.

➡ ***Some of the arguments are listed below :***

1. financing pattern

- Payment of interest depends entirely on the financing policies and financing pattern.
- A firm working with proprietor's capital only will have no interest to pay whereas
- a firm working with borrowed capital will have to pay a large amount of interest.
- In reality, whether a firm raises a certain sum of money from the proprietor or borrows from the outside does not make any difference as far as production efficiencies are concerned. If we compare the two firms and include interest as an item of cost, the firm, which works on the proprietor's capital will show very favourable results.
- However, this argument can be met by including a **notional amount of interest**, irrespective of the fact whether the funds belong to the owners or to the outsiders. Thus, an amount of notional interest may be charged on the total capital whether it is borrowed or not.

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2. Different amount of capital

- Another practical difficulty arises in the calculation of the amount of capital on which keeps on changing.
- working capital used by different departments, and allocation of the total interest charges will have to be made over various departments at different points of time.
- If notional interest is to be charged, the problem of determining a proper rate of interest also arises.
- In the money and capital markets, there is a large number of rates depending upon different factors like risk, period of maturity, bank rate, etc.

3. Higher value of closing stock

- By including interest on the proprietor's capital and by taking that figure in the cost of production, we would obviously be including profit since the closing stock will be valued at a higher figure.
- It appears that there are practical difficulties in including interest as part of the normal cost.

However, excluding it altogether may lead to wrong managerial decisions which is not desirable.

DECISION

It is therefore, suggested that while interest may be excluded from the regular cost sheet, cost calculations for other purposes for decision making should include a proper amount of notional interest where the interest will be material.

B. Depreciation

" Depreciation is thus the result of two factors

- the use, and
- the lapse of time.

We know that each fixed asset loses its intrinsic value due to their continuous use and as such the greater the use the higher is the amount of depreciation. The loss in the intrinsic value may also arise **even if the asset in question is not in service**.

In Cost Accounting depreciation is charged to the cost of production.

The various reasons for including the depreciation charge in Cost Accounting are as follows:

(a) To show a true and fair picture of Balance Sheet.

(b) To ascertain the true cost of production.

(c) To keep the asset intact by distributing losses in its value over a number of years.

(d) To keep the capital intact and to make a provision of the resources for the replacement of asset in future.

(e) To provide for depreciation before distribution of profit as required under the Companies Act

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C. Packing Expenses:

It includes the expenses incurred on wrapping, tying, bottles, boxes, containers or bags etc. In Cost Accounts they are treated as follows:

(1) It is treated as a ***direct material cost*** in the case of those products which cannot be sold without the use of a packing. For example ink-pot ; Bread; paste etc.

(i) It may be treated as ***distribution overhead*** if packing expenses are incurred to facilitate the transportation of finished products.

(ii) It may be treated as ***advertisement cost*** and included in selling overheads if it is incurred for advertisement to make the product attractive.

D. Fringe benefits

1. These are the additional payments or facilities provided to the workers apart from their salary and direct cost-allowances like house rent, dearness and city compensatory allowances.
2. These benefits are given in the form of overtime, extra shift duty allowance, holiday pay,pension facilities etc.
3. These indirect benefits stand to improve the morale, loyalty and stability of employees towards the organisation.
4. If the amount of fringe benefit is considerably **large,** it may be recovered as direct charge by means of a supplementary wage or labour rate;
5. **Otherwis**e these may be collected as part of **production overheads**.

E. Expenses on Removal and Re- erection of Machinery:

- Expenses are sometime incurred on removal and re-erection of machinery in factories.
- Such expenses may be incurred due to factors like change in the method of production;
- an addition or alteration in the factory building, change in the follow of production, etc.
- All such expenses are treated as **production overheads.**
- When amount of such **expenses is large**, it may be **spread over a period** of time.
- If such expenses are incurred **due to faulty planning** or some other abnormal factor, then they may be **charged to Costing Profit and Loss** Account.

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F. Bad debts:

There is no unanimity among various authors about the treatment of bad debts.

- Some authors believe that bad debts are financial losses and therefore should not be included in the cost of a particular product or job.
- Another view is that, bad debts are a part of selling and distribution overhead, especially where they arise in the **normal course of trading**. Therefore they should be treated in cost accounts in the same way as any other selling and distribution expense.

However **extra ordinarily large bad debts should not be included in cost accounts**.

G. Training expenses

- Training is an essential input for industrial workers.
- Training expenses in fact includes wages of workers, costs incurred in running
  a) **training** department,
  b) **loss arising from the initial lower production**,
  c) **extra spoilage** etc.
- Training expenses of **factory workers** are treated as part of the **cost of production**.
- The training expenses of **office; sales or distribution workers** should be treated **as office; sales or distribution overhead as the case may be.**
- These expenses can be spread over various departments of the concern on the basis of the number of workers on roll.
- Training expenses would be **abnormally high in the case of high labour turnover** such
  expenses should be excluded from costs and **charged to the costing profit and loss account.**

H. Bonus and gratuity:

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Bonus under the payment of Bonus Act is to be paid compulsorily to the workers although the amount of bonus may vary with amount of profit earned.
A minimum bonus of 8.33% is, however, payable irrespective of profit or loss earned by the concern.

1. The amount of bonus, therefore, may be included in a **direct labour cost** to the extent of the minimum bonus, as the same is payable even in a loss situation.

2. Any amount paid as **bonus in excess of the minimum** may be considered as an **appropriation of profit.**
3. However, **bonus linked with productivity** is definitely a part of the **overhead** cost.
4. So far as **gratuity is concerned**, it is indeed directly linked with the wages and is not by any means related to the profits. Accordingly, **it should be treated as an element of cost.**

I. Employee Welfare Costs:

It includes those expenses, which are incurred by the employers on the welfare activities of their employees. The welfare activities on which these expenses are usually incurred may include canteen, hospital, play grounds, etc.

- These expenses should be separately recorded as Welfare Department Costs.
- These Costs may be **apportioned** to production cost centres on the basis of total wages or the **number of men** employed by them.

J. Carriage and cartage expenses:

It includes the expenses incurred on the movement (inward and outwards) and transportation of materials and goods.

- Transportation expenses related to **direct material** may be included in the cost of **direct material** and
- Those relating to **indirect material** (stores) may be treated as **factory overheads**.
- Expenses related to the **transportation of finished goods** may be treated as **distribution overhead**.

K. Night shift allowance:

Workers in the factories, which operate during **night time** are paid some extra amount known as '**night shift allowance'**.

- This extra amount is generally incurred due to the general **pressure of work beyond normal capacity** level and is treated as **production overhead** and recovered as such.
- If this allowance is treated as **part of direct wages, the jobs**/production carried at night will be **costlier than jobs**/production performed during the day.
- However, if additional expenditure on night shift is incurred to **meet some specific customer order**, such expenditure may be charged **directly to the order concerned**.
- If night shifts are run due to **abnormal circumstances**, the additional expenditure should be charged to the **costing profit and loss account**.

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L.Small tools of short effective life.

Small tools are mechanical appliances used for various operations on a work place, especially in engineering industries. Such tools include drill bits, chisels, screw cutter, files etc.

Treatment of cost of small tools of short effective life:

(i) Small tools purchased may be capitalized and depreciated over life if their life is ascertainable. Revaluation method of depreciation may be used in respect of very small tools of short effective life. Depreciation of small tools may be charged to:

- Factory overheads
- Overheads of the department using the small tool.

(ii) Cost of small tools should be charged fully to the departments to which they have been issued, if their life is not ascertainable.

Administration overheads

- These are costs of formulating the policy, directing the organisation and controlling the operation of an undertaking.
- These are not related directly to production activity or function.
- In other words, all expenses, incurred on policy formulation, direction, control, office administration and business management are included in administration overheads.

Treatment of Administrative Overheads in Cost Accounting

(i) ***Charge to Costing Profit and Loss Account:*** According to this method administrative overheads should be treated as fixed cost as they are concerned with the formulation of policy. Hence these overheads should be transferred to the Costing Profit and Loss Account.

(ii) ***Apportionment between Production and Selling and Distribution:*** According to this method, it is assumed that administrative overheads are incurred both for production and for selling and distribution. Therefore these overheads should be divided on **some equitable** basis between production and selling and distribution activity.

(iii) ***Treat as a separate element of total cost:*** Here administration overheads are considered as a cost of a distinct and identifiable operation of the organisation necessary to carry on its activity. Therefore these overheads are recovered separately on some equitable basis which may be on cost or sales basis.

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Problems of controlling the selling and distribution overheads.

(i)The incidence of selling & distribution overheads depends on external factors such as distance of market, nature of competition etc. which are beyond the control of management.

(ii) They are dependent upon customers' behaviour, liking etc.

(iii) These expenses are of the nature of policy costs and hence not amenable to control.

The above problems of controlling selling & distribution overheads can be tackled by adopting the following steps:

(a)Comparing the figures of selling & distribution overhead with the figures of previous period.

(b)Selling & distribution overhead budgets may be used to control such overhead expenses by making a comparison of budgetary figures with actual figures of overhead expenses, ascertaining variances and finally taking suitable actions,

(c)Standards of selling & distribution expenses may be set up for salesmen, territories, products etc. The laid down standards on comparison with actual overhead expenses will reveal variances, which can be controlled by suitable action.

Selling and Distribution Expenses.

Expenses incurred for the purpose of promoting, marketing and sales of different products.

Distribution expenses: Expenses relating to delivery and despatch of goods/products to customers.

Accounting treatment for selling and distribution expenses:

Selling and distribution expenses are usually collected under separate cost account numbers.

These expenses may be recovered by using any one of following method of recovery.

1. Percentage on cost of production / cost of goods sold.
2. Percentage on selling price.
3. Rate per unit sold.

Notional rent of a factory building

It is a reasonable charge raised in the cost accounts for the use of owned premises.

Reason for included in cost accounts

Reason for the use of such a nominal charge is to enable comparison between the cost of items made in factories which are owned and in rented factories. However, it may be noted that in the case of owned factory, cost for the same is accounted for by means of depreciation.

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