

# COST ACCOUNTING

UNIT – I

B.COM 5<sup>th</sup> Semester (SW)

## EVOLUTION OF COST ACCOUNTING

The widespread interest in the subject of cost accounting could be said to have developed with Industrial Revolution which started in 1760. As mechanization, simplification, standardisation and mass production followed in the wake of factory system, costing had to keep pace with these developments. Until the 18th century, cost accounting was in the domain of the engineer. Its integration with financial accounting began when accountants started to audit the cost records. Under the influence of financial accountant, cost accounting came to be viewed almost exclusively as a means of inventory valuation and profit measurement. It has grown only in the 20th century as an independent discipline. Cost accounting has found to be of assistance to management, in compiling and providing requisite statistical data. It has developed rapidly and assisted management in providing valuable information to take appropriate decision in time. Cost Accounting throws light on the excessive waste of materials, inefficient labour operations, idle machinery and many other similar factors, which are responsible for reduction in the profit of the business activities. Managements found that cost accounting could render valuable assistance in planning, controlling and coordinating the activities.

## DEFINITIONS/MEANING

- (a) **Costing:** The institute of Cost & Management Accountants (ICMA) London has defined costing as the ascertainment of costs, costing includes techniques and processes of ascertaining costs.
- (b) **Cost Accountancy:** The Institute of Cost and Management Accountants (ICMA) London has defined Cost Accountancy as the “application of costing and cost accounting principles, methods and techniques to the science, art and practice of cost control and ascertainment of profitability as well as presentation of information for the purpose of management decision making”.  
Accordingly Cost Accountancy includes costing, cost accounting, budgetary control, cost control and cost audit. Cost accounting refers to the process of determining and accounting the cost of some particular product or activity. It also includes classification, analysis and inferences production of costs.
- (c) **Cost Accounting:** The I.C.M.A. London defines Cost Accounting as “the process of accounting for cost from the point at which expenditure is incurred or committed to the establishment of its ultimate relationship with cost centers and cost units”.  
In practice, costing, cost accounting and cost accountancy are often used interchangeably. Costing refers to ascertainment of costs, accumulation and measurement of cost of activities, processes, products or services. Cost data are used to prepare the statement of cost or cost sheet. Cost Accounting is a specialized branch of accounting which assists management to control costs and to create an awareness of the importance of cost to well-being of the business organization. Systematic and useful cost data and reports are required to manage the business to achieve its objectives.
- (d) **Cost Centre:** Cost Centre is a location, person or an asset for which costs can be ascertained and used for the purpose of cost control. It is an organizational segment or area of activity used to

accumulate costs. Different types of cost centers used in a manufacturing organization are personal cost centers, impersonal cost centers, operation cost centers and process centers.

- (e) **Cost Units:** A cost unit is a unit of quantity of product or service in relation to which cost may be ascertained. There should be a unit of activity for proper ascertainment of cost. Every organization has a unit of its own for measurement of raw materials, and finished products. Once the unit of activity is decided it becomes a cost unit for the cost accountant. The cost units should be suitable to the organization.

### **COST ACCOUNTING PROFESSION IN INDIA**

To develop the Cost and Management Accountancy profession, the Institute of Cost and Works Accountants of India was set up at Calcutta in 1944. It got statutory recognition in 1959. It has more than two chapters through India and around six overseas centres. The Department of Company Affairs issued a specific order under section 233 (1) of the Companies Act, 1956 to a particular company to get its cost records audited. The order indicates the product and the period to be covered. The cost audit is conducted by a Cost Accountant holding a Certificate of Practice from the Institute. The Department of Company Affairs of the Government of India also prescribed Cost Accounting Records & Rules under Section 209(1) (d) of the Companies Act, 1956. Accordingly, more than 35 industries are required to maintain Cost Accounting records relating to Production, Work in Progress, Finished Goods, Utilities, Repairs and Maintenance, Wages and Salaries Overheads and Sales.

### **OBJECTIVES OF COST ACCOUNTING**

The cost accounting objectives are normally used to denote activities for which costs are required to be determined separately. The activities may be function, organizational sub-division, contract or other work unit for which data are required. There is direct relationship among information needs of management, cost accounting objectives and techniques and tools used for analysis in cost accounting. Thus, cost accounting has the following objectives

1. To determine product costs.
2. To facilitate planning and controlling of regular business activities.
3. To supply information for short and long run decisions.

### **IMPORTANCE OF COST ACCOUNTING**

Cost Accounting is very important for a commercial organization. It is also useful for any other organization. It helps management in different fields one of such fields is presentation of information in the most useful manner.

Cost Accounting is used to measure, analyse or estimate the costs. Profitability and Performance of individual products, departments and other segments of an organization, for either internal or external or both and to report to the interested parties. Cost Accounting concerns itself with the synthesis and analysis of costs. Its purpose in the modern days is to help management in the twin functions of decision- making and control.

Thus, Cost Accounting is not simply cost finding but it is advising management, planning and control of organization and business operations. The Companies Act, also provides that certain companies have to maintain cost accounting records and accounts and conduct the audit of cost accounts.

### **ADVANTAGES OF COST ACCOUNTING**

A cost accounting system when installed will result in the following:-

- i) Cost Accounting reveals areas where materials were used excessively, labour operated inefficiently and expenses incurred exorbitantly.
- ii) It suggests cost reduction programme. A continuous cost jointly with technical personnel seeking areas for effecting cost reduction brings beneficial results.
- iii) Cost account locates the specific causes for the variations in profit. It points out the losing product or operations. It indicates reasons for loss and suggests remedial measures in time.
- iv) It provides suitable data to management to select best alternatives. It may be to decide whether to buy or make a part, to operate Machine X or Y, to accept or reject an order below cost.
- v) Cost accounts give actual cost for price fixation. True demand and supply play vital role in fixing price. But cost is an essential guide here.
- vi) It provides vital data to till in tenders. Tenders filled in with the help of marginal costing technique are successful.
- vii) Standard costing and budgetary control aid maximum efficiency.
- viii) Cost comparison helps cost control. Such comparison may be between different periods of the same department or comparable operations of different units.
- ix) Cost data are useful to outside agencies like Government, Tribunals, etc., for taking decisions on tariff regulations, settlement of disputes, variations in wage levels etc.
- x) It provides idle capacity cost to assist overcoming capacity utilization crises.
- xi) Marginal costing technique helps to take suitable short term decisions in times of trade depression.
- xii) Cost Accounting lays down cost centres and responsibility centres which ensures proper organizational structure.
- xiii) Cost accounting provides for perpetual inventory system. This enable inventory control and preparation of short term profit and loss accounts.
- xiv) Cost of closing stock of raw materials, work in progress and finished products are readily available in cost records.

All organizations will not get all the advantages listed above. However, an efficiently operated costing system with full support from management can reap most of them.

### **LIMITATIONS OR OBJECTIONS OF COST ACCOUNTING**

- 1- It is unnecessary because it involves duplication of work. Many good enterprises are functioning without any costing system.
- 2- It is expensive because the installation of cost accounting system involves additional cost.
- 3- It is inapplicable to many industries.
- 4- It is a failure in some enterprises.
- 5- The results shown by cost accounts differ from those shown by financial accounts.

### **FINANCIAL ACCOUNTING**

Financial Accounting is concerned with providing information to external users such as shareholders, creditors, labour unions, government authorities etc., It is oriented towards the preparation of financial statements i.e. Profit and Loss account and Balance Sheet which summarises the results of operations for selected periods of time and show the financial position at particular dates. It follows Generally Accepted Accounting Principle. Financial accounting accounts for money.

### **Limitations of Financial Accounting**

1. Financial accounting is mostly historical in nature.
2. It does not provide detailed cost information for different jobs, processes or departments.
3. It is difficult to know the behaviour of cost as expenses are not classified into fixed and variable.
4. It does not possess an adequate system of standards to evaluate the performance of departments and employees.
5. It does not provide necessary information to management in taking important decisions like pricing, special orders, alternative etc.
6. Annual reporting is a rule in financial accounting.

### **METHODS OF COSTING OR TYPES OF COSTING**

Several methods or types of costing have been designed to suit the needs of individual business conditions. There are two main methods of costing; these are : Job Costing and Process Costing. All other costing methods are either variants of these two methods or techniques designed for particular purposes, for specific occasions and for specific conditions.

**Job Costing** : This method is suitable for ascertaining cost of a job, a specific order or a batch of finished products. Here the cost unit is a job comprising a specific quantity manufactured as per an order. A job may be small or big. It may be as per a customer's order or for stock for eventual sale. Other variations of job costing are given below: -

- i) **Contract Costing** :- This method is used by contractors for construction of building bridges etc. Here the unit of cost is a contract. The period of this contract normally extends beyond the current financial years.
- ii) **Batch Costing** :- This method is applicable to manufacturers producing economic batches of components for subsequent assembling. Large engineering firms use this method. Here the costing is done for a batch of the components instead of a single component.
- iii) **Multiple Costing** :- This is used in large industries such as automobile, aero plane industries etc., Here the cost of components is calculated separately. Each component has a job sheet. Later, these are assembled to complete the cost of aeroplane or other finished product.

**Process Costing** :- This method is used by industries manufacturing products by continuous processes. Cost is ascertained for a period by process or department. As distinct from job costing, time is given more importance here. Hence, this is also called period costing. Examples of the

industries using process costing are chemical industries, paper making and refineries. Other variants of process costing are:

- i) **Operation Costing** :- Operation Costing is applied where the production passes through several operations successively before the final product is made. Wastages may occur in each operation. Operation costing is used in industries such as box making, shoe making, toy making industries. Here cost unit is an operation around which costs are accumulated.
- ii) **Single or Output or Unit Costing**: - This method is applied where the production is of continuous nature and the final product is only one or the different grades of same product. Examples of the industries applying this method are mining industry, quarries and steel production.
- iii) **Operation Costing** :- This method is applied for ascertaining cost of service rendered. Examples of industries using this method are transport services, electricity and boiler house. In transport services, the unit of cost is a passenger Kilo-meter, or a Kilogram

## **TECHNIQUES OF COSTING**

The techniques of costing are not the alternatives to the methods of costing, but are the different ways of analyzing and presenting costs for the purpose of controlling costs and making managerial decisions irrespective of the method of costing being used. Popular techniques of costing are as follows:-

- 1- **Marginal Costing**: It is the practice of charging all variable costs to operations, processes or products and writing off all fixed costs against profits in the period in which they arise.
- 2- **Direct Costing**: It is the practice of charging all direct costs to operations, processes or products and writing off of all indirect costs against profits in the period in which they arise.
- 3- **Absorption Costing**: It is the practice of charging all variable manufacturing costs and fixed production overheads to operations, processes or products and writing off administration, selling and distribution overheads against profits in the periods in which they arise.
- 4- **Uniform Costing**: It is the practice of using the same costing principles and/or practices by a number of organisations in the same industry. It helps in inter-firm comparison, fixation of prices, cost control and cost reduction and in seeking tax relief or protection from government.
- 5- **Standard Costing**: It is a system which involves-
  - a- Fixation of standards for each element of cost,
  - b- Comparison of actual costs with standard costs to ascertain the variances.
  - c- Analysis of variances to ascertain the reasons for variances
  - d- Presentation of information to appropriate levels
- 6- **Budgetary Control**: It is a system which involves-
  - a- Establishment of budgeted performance for each activity
  - b- Comparison of actual performance with budgeted performance
  - c- Analysis of variance
  - d- Take corrective action

## **INSTALLATION OF COSTING SYSTEM**

Factors to be considered for for installation/adoption of costing system:-

- 1- The costing system designer should consider the general nature of business to determine its suitability.
- 2- The objective of costing system – whether to fix selling prices or control cost or both should also be considered.
- 3- Organisation structure should be studied to determine the manner in which costing system could be introduced without altering or extending the organization appreciably.
- 4- Technical aspects as well as size and layout of the organization is also needed to study by the designer.
- 5- Existing methods and procedures for the purchases, receipts, inspection, storage, issue, return or transfer of materials should be studied.
- 6- Methods of wage payment.
- 7- Accuracy desired.
- 8- Standardization needed.
- 9- Requirement of flexibility, simplicity and economy.
- 10- Methods of maintenance of cost records. Etc.

#### **DIFFICULTIES IN INSTALLING A COSTING SYSTEM**

- 1- Lack of support from top management.
- 2- Resistance from existing accounting staff.
- 3- Non co-operation at other levels.
- 4- Shortage of trained staff.
- 5- Heavy implementation costs.

#### **ESSENTIAL OF A GOOD COSTING SYSTEM**

- i) The costing system should fit in the general organisation of the business. Normally no alternations in the organisation should be made to facilitate costing system. However, unavoidable changes could be made in the set up to ensure effective costing system.
- ii) All relevant technical aspects (such as nature and method of production, varieties of product ) should be adequately studied for employing suitable cost control devises.
- iii) The size, lay out and organisation of the factory should be adequately described for the benefit of those operating costing system.
- iv) The procedure required to be followed for purchase, receipt, storage and issue of materials should be clearly laid down.
- v) The methods of wage payment and system of labour control should be specified.
- vi) The norms for appointment and allocation of overhead should be specified.
- vii) Forms and records of original entry should be suitably designed to ensure economy.
- viii) The forms should be got printed. It should contain full instructions. Persons who use them should be adequately trained to ensure accuracy and relevance of the data written on the forms.
- ix) An examiner should check and sign every entry in the forms.
- x) Responsibility for preparing and sending the cost reports to various levels of management at periodical intervals should be fixed and necessary instructions in this regard issued.
- xi) Full co-operation from all concerned in the management should be enlisted. The resistance from the employees should be minimum.
- xii) Cost of administering the costing system should be commensurate with the benefit available there from.
- xiii) Design the system suitably to enable exercising cost control effectively. xiv) The cost accounts and the Financial accounts should be interlocked. Alternatively, result of the two sets of accounts should be reconciled.
- xv) Frequency, regularity and promptness in the presentation of cost reports should be ensured.

### **DISTINCTION BETWEEN COST AND FINANCIAL ACCOUNTING**

Cost Accounting is a close follower of financial accounting. It is not independent of financial accounting. Though there are common grounds between the two, the important differences are given below:-

- i) Reporting:- The major objective of financial accounting is external reporting whereas the focus of cost accounting has been essentially internal i.e. management.
- ii) Flexibility :- Financial accounting is mostly historical or after the event while cost accounting is much more flexible and open minded and includes in both retrospective and anticipatory calculations.

iii) Nature :- Financial accounting classifies, records, presents and interprets in terms of money transactions whereas cost accounting classifies, records, presents and interprets in a significant manner the material, labour and overhead costs involved in manufacturing and selling each product.

iv) Financial accounting uses Generally accepted Accounting Principles while recording, classifying summarizing and reporting business transactions whereas cost accounting is not bound to use GAAP and it can use any technique or practice which generates useful information.

iv) Time Span : Financial accounting data are developed for a definite period, usually a year, half year or a quarter, but cost accounting reports and statements can be prepared whenever needed.

vi) Accounting Method :- Financial Accounting follows the double – entry system for recording, classifying and summarizing business transactions . The data under Cost Accounting can be gathered for small or large segments or activities of an organisation and monetary as well as other measures can be used for different activities in the organisation.

## ELEMENTS OF COSTS

Composition of Elements of Costs:- A manufacturing organisation converts raw materials into finished products. For that it employs labour and provides other facilities. While compiling production cost, amount spent on all these are to be ascertained. For this purpose, cost are primarily classified into various elements. This classification is required for accounting and control. The elements of cost are

(i) Direct material (ii) Direct labour (iii) Direct expenses and (iv) Overhead expenses.

## CLASSIFICATION OF COSTS

**Prime Cost** : The aggregate of Direct material cost, Direct labour and Direct expenses is termed as Prime Cost. Direct costs are traceable to products or jobs. Direct materials It includes cost of materials consumed in the production process which can be directly allocated to the cost center.

**Direct material** –Direct material can be identified and charged to the finished product.

Examples

i) Material specially purchased for a specific job or process. ii) Materials passing from one process to another.

iii) Consumption of materials or components manufactured in the same factory.

iv) Primary packing materials.

v) Freight, insurance and other transport costs, import duty, octroi duty, carriage inward, cost of storage and handling are treated as direct costs of the materials consumed.

In certain cases direct materials are used in small quantities and it will not be feasible to ascertain their costs and allocate them directly. For instance, nails used in the manufacture of chairs and tables, glue used in the manufacture of toys. In such cases cost of the total quantity consumed for the period will be treated as Indirect costs.

**Direct Labour**-This includes the amount of wages which can be easily identified and directly charged to the product. These are the costs for converting raw material into finished products. Wages paid to workers for operating Lathe machines, Drilling machines etc. in a Tool room are Direct wages.

**Direct Expenses**-This includes expenses other than materials and labour which can be easily identified with a particular product or process. For example. Excise duty expenses. Indirect costs cannot be easily identified with a particular products or process.

**Indirect materials**- Materials which cannot be traced as part of the finished products are known as Indirect materials. Example :

a. Consumable stores such as lubricants, cotton wastes, tools etc. b. Materials of insignificant value not worthwhile to ascertain the cost separately, for charging directly such as nails (for making chair) glues (for making toys). These materials can be apportioned to or absorbed by cost centres or cost units arbitrarily. Indirect labour is the cost which cannot be directly charged or identified to the finished product. Indirect labour is apportioned to or absorbed by cost centres or cost units suitably. Examples: a. Salary to Store- keeper

b. Wages to Time – keeper

**Indirect Expenses:** These are general expenses not incurred for any particular product or service and not chargeable to the products directly.

Examples : a. Rent,Rates and Insurance of Factory b. Power,lighting,heating repairs, telephone expense, printing and stationery.

Overheads can be sub-divided into following main groups.

1. **Factory or Works Overheads:** Also known as manufacturing or production overheads it consists of all costs of indirect materials, indirect labour and other indirect expenses which are incurred in the factory. Examples : Factory rent and insurance. Depreciation of Factory building and machinery.

2. **Office or Administration overheads:** All indirect costs incurred by the office for administration and management of an enterprise. Examples: Rent, rates, taxes and insurance of office buildings, audit fees, directors fees.

3. **Selling and Distribution overheads:** These are indirect costs in relation to marketing and sale. Examples : Advertising, Salary and Commission of sales agents, Travelling expenses of salesmen.

## CONCEPT OF COST

Cost represents a sacrifice, a foregoing or a release of something of value. It is reckoned in money and usually appears as payment of money. It is money outlay for productive factors. Costs are expenditure incurred in doing something. Costing is the process of determining the cost of doing something i.e cost of manufacturing an article, rendering service or performing a function. Cost is composed of three elements- material, labour and expenses or overheads. Each of these costs can be further classified as

(a) **Direct Cost:** Direct costs are costs which can be easily identified with a particular Product, Process or Department.

(b) **Indirect Cost:** Indirect costs refers to costs which cannot be conveniently identified with a particular product. Process or Department. Indirect costs are common costs like rent, repairs salaries, which are incurred for the benefit of a number of cost units or cost centres.

## COST CLASSIFICATIONS

Cost items are analysed or grouped according to their common characteristics which is some independent factor. There are many objectives of cost classifications depending on the requirements of management. The different cost classifications are as follows:-

1. **Cost Classification by Elements** : The constituent elements of costs are broadly classified into three distinct elements i.e. materials, labour and expenses These three elements of cost can be further grouped into direct and indirect categories. Direct materials refer to the cost of materials which are conveniently and economically traceable to specific units of output for example. Raw cotton in textiles, crude oil in making diesel. The indirect materials refer to materials that are needed for the completion of the product but whose consumption with regard to the product is either so small or so complex that it would not be appropriate to treat it as a direct material. For example, stationery lubricants, cotton waste etc.
2. **Cost Classification by Function**: A business organisation has to perform several functions such as Manufacturing, Administration, Selling and Distributing and Research and Development. Functional classification of cost implies that the business performs many functions for which costs are incurred. Expenses or Costs are usually classified by function and grouped under the headings of Manufacturing, Selling and Administrative costs in measuring net income.

**Manufacturing costs** are all check costs incurred to manufacture the products and to bring them to a saleable condition. This includes direct material, direct labour and indirect manufacturing costs or overheads.

**Administration costs** are incurred for formulation of policy, directing the organisation and controlling the activities excluding the cost of research, development, production, selling and distribution. These costs include salary of executives, office, staff, office rent, stationery, postage etc. Selling costs, include the cost of creating and stimulating demand and getting customers. For example, advertisement, salary and commission to salesmen, packing.

**Distribution costs** include the cost of warehouse, freight, cartage etc. Research and Development costs are incurred in the process of finding out new ideas, new processes by experiments or other means of putting the results of such experiments on a commercial basis.

Functional classification of cost is important because it provides an opportunity to the management to evaluate the efficiency of departments performing different functions in an organisation.

3. **Cost Classification by variability**: Cost can be classified as  
(i) fixed (ii) variable and (iii) semi -fixed or semi variable in terms of their variability or changes in cost behaviour in relation to changes in output or activity or volume of production. Activity may be indicated in any form such as units of output, hours worked, sales, etc. The separation of costs into variable and fixed categories is the most difficult part of the costing operation. Certain costs are easily identifiable as variable or fixed while other costs can be segregated only after careful consideration of their nature and an examination of their behaviour.
  - i) **Fixed costs**: Fixed cost is a cost which does not change in total for a given time period despite wide fluctuations in output or volume of activity. These costs must be

met by the organisation irrespective of the volume level. These costs are also known as capacity costs, period costs or stand - by costs; for example, rent, property taxes, supervisor's salary, advertising, insurance etc.

ii) **Variable costs:** Variable cost are those costs which vary directly and proportionately with the output. There is a constant ratio between the change in the cost and the change in the level of output. Direct materials and labour are the examples of variable costs. Thus, all these costs which tend to vary directly with variations in volume of output are variable costs. However, it must be remembered that variable costs remain the same or approximately the same in amount per unit of production regardless of increase or decrease in volume.

iii) **Semi variable or semi fixed costs:** There is another group of costs in between the fixed and variable costs. It is semi variable or semi fixed costs. These costs vary in some degree with volume but not in direct proportion. Such costs are fixed only in relation to specified constant conditions. Semi fixed costs are those costs which remain constant upto a certain level of output after which they become variable. For example: maintenance of building, depreciation of plant, supervisor's salary, telephone expenses etc.

## **COST SHEET**

Cost sheet is a statement prepared to present the detailed costs of total output during a period. It provides information relating to cost per unit at different stages of total cost of production. The preparation of cost sheet is one of the important and primary function of cost accounting. Cost sheet is not an account. There is a prescribed form for preparation of cost sheet. A cost sheet is a statement of cost prepared for a given period of time in such a manner that it indicates various elements of cost as clearly as possible.

The cost sheet is useful in ascertaining the total cost of production per unit, formulation of production plan, fixing up the selling price and minimize the production cost. Sometimes standard cost data are provided to facilitate comparison with the actual cost increased. The preparation of the cost sheet requires understanding of the treatment of the following items:-

a) **Stock of raw materials :** The opening and closing stock of raw materials are to be adjusted with purchase of Raw materials in order to determine the value of raw materials consumed for the output produced. Carriage/ Freight inward and Octroi on purchase etc. also to be added to purchases. This is a part of Prime Cost.

b) **Stock of Work in Process –** The value of stock of work in process is a part of Factory cost and therefore, it should be adjusted with factory overheads. Sale of scrap should be deducted from the factory overheads in order to determine the total factory cost.

c) **Stock of Finished goods :-** Finished goods covers the products on which factory work has been completed. It is the cost of completed production. The opening and closing values of finished goods are to be adjusted with the total cost of production in order to arrive at cost of sales.

**Expenses excluded from cost sheet:** There are certain expenses /costs which do not form a part of cost sheet. Some of these expenses are an apportionment of profit.

Examples of these expenses are –

- i) Dividend to shareholders
- ii) Income Tax
- iii) Interest on loan
- iv) Donations paid
- v) Capital expenditure
- vi) Capital loss on sale of assets.
- vii) Commission to Partners / Managing Director
- viii) Discount on issue of shares/ debentures
- ix) Underwriting commission.
- x) Writing of goodwill/ bad debts
- xi) Provision for Taxation, Bad Debts or any kind of Fund or reserves.

### **Elements of Total Cost**

Costs are classified under different heads which represent the successive stages through which the cost flow.

i) **Prime Cost:** Prime cost is the basic cost of any product. It comprises of those expenses which could be traced directly to it. The prime cost consists of cost of direct materials, direct labour and direct expenses. Direct expenses include special expenses which can be identified with product or job and are charged directly to the product as part of the prime cost. For example cost of hiring special plant or machinery, cost of special moulds, design or patterns, Architect's fees, Royalties, License fees etc.

ii) **Work cost:** Works cost of a Product consists of prime cost plus the portion of works or factory expenses chargeable against the Production. Works or factory expenses include, indirect materials indirect labour and indirect expenses. Indirect materials refer to those materials that are needed for the completion of the product but the consumption of these materials is either so small or complex that it would not be appropriate to treat it as direct materials. These are supplies that cannot be conveniently and economically charged to a specific unit of output. For example, lubricants, cotton waste, works stationery etc. Indirect labour is that labour which does not affect the construction or the composition of the finished product. This is the labour cost of production related activities that cannot be associated with or conveniently traced to specific product through physical observation. For example, Foremen's salary and salary of employees engaged in maintenance or service work. Indirect expenses covers all expenditure incurred by the manufacturer from the time of production to its completion as delivery to customer by way of rate of product. Any cannot be allocate but which can be apportioned to or absorbed by the cost cehtres cost 250 units are known as indirect expenses. These expenses are incurred for the benefit of more than one product, job or activity and, therefore, must be apportioned by appropriate bases to the various functions or products. For example, lighting and heating, maintenance factory manager's salary, watch and ward department's salary etc.

(ii) **Cost of Production:** Cost of Production consists of works cost plus an additional amount of office and administrative expenses. It includes all expenses connected with the managerial functions such as planning, organizing, directing, co-ordinating and controlling the operations of the manufacturing business. For example, office rent, salary, lighting, stationery, repairs and maintenance and depreciation of office building, audit fees, legal expenses.

(IV) **Cost of Sales:** Cost of sales consists of cost of production plus proportionate selling and distribution expenses of the product. Selling expenses include the expenses incurred for creating demand for the product such as advertisement, salaries of salesmen, selling expenses and show room expenses. Distribution expenses are those expenses incurred in connection with the delivery of goods to the customers such as packing, carriage outwards, warehouse expenses.

### SUM UP

Cost Accounting is the process of accounting for costs from the point at which expenditure is incurred or committed to the establishment of its ultimate relationship with cost centre and cost units. Cost accounting profession got recognition in 1939 in India. It has been made compulsory for specified manufacturing companies. Cost Accounting has the objectives of determining Product costs, facilitate planning and control of regular business activities and supply information for taking short term and long-term decisions. Cost Accounting is useful in different areas such as materials, labour, overheads, stock valuation etc. Financial Accounting is concerned with providing information to external users. It does not provide detailed cost information for different jobs, processes or departments. It also does not possess an adequate system of standards to evaluate the Performance of departments and employees. There are two major methods of costing- job costing and process costing. Job costing includes Contract, Batch and Multiple costing. Costing system should be developed in an organisation to fit in the general organisation of the business. Cost and Financial Accounting are different from each other.

### SOME COSTING TERMS

- a- **Cost Ascertainment:** - cost ascertainment is the process of determining actual costs after they have been incurred.
- b- **Cost Estimation:** - it is the process of determining future costs in advance before production starts, on the basis of actual past costs adjusted for anticipated future changes.
- c- **Cost Allocation:** - allocation of costs is the process of charging the full amount of an individual item of cost directly to a cost centre for which this item of cost was incurred.
- d- **Cost Apportionment:-** it is the process of charging the proportion of common items of cost to two or more cost centres on some equitable basis.

**INTRODUCTION**

Materials and labour are the two major elements of costs. Hence, the ascertainment and control of these costs are important aspects. Proper accounting and control over material purchase, consumption and inventories are important aspects of effective management. Labour is also an essential factor of production.

Therefore, it is necessary to use different methods of time keeping, time booking, wage payments and pay roll accounting and treatment of idle time and overtime in cost accounts. Factory overheads are opening costs of a business enterprise which cannot be traced directly to a particular unit of output. It is the aggregate of indirect materials, Labour and expenses.

**STORAGE MATERIALS:** Materials refer to raw materials used for production, subassemblies and fabricated parts. The term materials and stores are used in the same sense. However, stores is a wider term and comprises many other items besides raw materials. It includes tools, equipment's maintenance and repairs items, factory supplies, components, jigs, fixtures etc.

**DIRECT AND INDIRECT MATERIALS:** Materials can be classified as direct and indirect materials. The materials which can be easily identified and attributed to the individual units are known as direct materials. For example, leather used in manufacture of shoes. These materials form part of the finished goods.

All costs, which are incurred to obtain direct materials are also known as direct materials for example carriage inward, octroi etc. Indirect materials on the other hand, do not form part of the finished product and cannot be conveniently and accurately allocated to a particular unit of product. For example, consumable stores, cotton waste, lubricating oil etc. Cost associated with indirect materials are also included in the cost of indirect materials. The grouping of materials into direct and indirect sometimes, become a matter of convenience.

**MATERIAL PURCHASE PROCEDURE**

There is a purchase department which carries out the function of purchases of materials. The purchase manager is responsible for ensuring the items ordered are of the standard quality, lower cost and received in time. The purchase procedure vary with different business firms. The purchase procedure is given below:

a) **Purchase Requisition:** Purchase requisition is the formal request made by the storekeeper to the purchase department for giving order of raw materials or stores. It serves the dual purpose of authorizing the purchase department to make purchases and provides a record of the description and quantity of materials required. It also fixes the responsibility of the department or personnel making purchase requisition.

b) **Purchase order:-** After receiving the duly approved requisition, the purchase department has to place an order with a supplier. It is an offer to buy certain

materials at stated price and terms. For routine purchases, the order is placed through established supplies. In other cases, the purchase department may ask for bids or send out request for quotation before placing an order. The purchase order is a formal contract for the supply of materials. Copies of the purchase order are sent to the departments concerned.

c) **Receiving and Inspection of materials:** The stores department is responsible for taking delivery of packages and to get a physical verification of the contents. When the materials are received, the stores official gets the packages, open them and make a detailed verification of the contents. After the contents of the packages are checked, the details are entered into a Goods Received Note. Copies of the G.R.Note are issued to the supplier, purchase and accounts department, where the factory has to test the materials received for quality and specifications. It has to ensure that the quality of materials is as per purchase order.

d) **Approval of Invoices and Payment:** Invoice received by the purchase department is forwarded to the Accounts department for payment with their recommendation. Accounts department has to check the authenticity, arithmetical accuracy and G. R. Note in order to make sure that the goods are as per purchase order. When it is found that everything is in order, it is passed for payment by the Accountant. Then the cashier will draw the cheque as per terms and conditions of the purchase order and invoice and finally payment is made to the supplier.

### **STORE KEEPING/STORAGE OF MATERIALS**

After purchase, receipt and inspection of materials, the next important step is storage of materials. It is known as storekeeping. It is physical storage of materials. The storekeeper is appointed to look after this work in the stores department. The storekeeper should have the technical knowledge and experience in stores routine and storekeeping. He has to ensure regular supply event overstocking and under stocking and minimize the cost of materials. The storekeeper has to perform the following functions:

- i) Receipts of materials.
- ii) Issue purchase requisitions.
- iii) Maintain proper record of receipt, issue and balance stock of materials.
- iv) Placing and arranging materials at proper place.
- v) Issue of materials against proper authorization.
- vi) Minimizing storage handling and maintaining costs.
- vii) Ensure that the stock neither exceed maximum level or go below the minimum level.

### **ISSUE OF MATERIALS**

All materials in the stores are meant for issue to various departments. The procedure for the issue is normally laid down by the management. The storekeeper issues materials to various department against material requisition note.

..... On receipt of material requisition, the storekeeper issues the necessary materials after obtaining the signature of the person receiving the materials. Materials requisitioned from the storekeeper and not needed or found to be defective are

returned to the storeroom and a returned materials report is prepared by the concerned person upon receipt of the materials.

Sometimes, it is necessary to return any rejected, excess or damaged materials to the supplier after making correct entries in the stores ledger. Materials are issued from stores on properly prepared and approved materials requisition. It is a written order to the storekeeper to deliver materials to the place and the department. The materials requisition note includes date, requisition number, department charged, name of the stores, ledger account to be credited, description of materials, quantity, unit price, total value, delivery point and the signature of the person requisitioning the material and signature of the departments executive approving the requisition or comparatively fixed list of materials generally use a special form of material requisition which is called as 'bill of materials'.

Materials requisitioned from the stores and not required or found to be defective are returned to the stores, where a returned material report is prepared by the concerned person. The amount and value of materials returned to the stores are deducted from total value of materials issued. Similarly, the amount shown by materials returned is deducted from the total amount charged to each department. It may be necessary to return any rejected, excess or damage materials to the supplier. This also requires some correction entries in the stores ledger.

### **PRICING OF MATERIALS ISSUED/METHODS FOR MATERIAL PRICING**

When materials are purchased they are recorded at price at which they are purchased after asking necessary adjustments for discounts, transportation charges, cost of containers etc. But, when it comes to the issue of materials, the problem arises with regard to the price at which each issue should be recorded because the different quantities of materials are purchased at different prices. For this purpose, a number of methods of pricing the issue of materials are used which are as follows:-

a) **FIFO Method** :- FIFO is a method of pricing materials is based on the assumption that the goods are received first are issued first. .It is used when the materials received but are to be issued first. The price of the earliest lot/ quantity is taken first and then for the next lot. The value of closing stock confirms more or less, to the current market price. This method is suitable for falling price.

b) **LIFO Method** :- It is based on the assumption that the goods which are received last are issued first. The physical flow of goods therefore, need not necessarily coincide with the pattern of cost flow assumption. the cost of materials issued will represent the cost of latest purchases. The storekeeper will charge the cost price of the latest lot purchased. Cost of closing stock represents the cost of earlier purchases. This is suitable in the times of rising prices.

d) **Average/Simple Average Rate Method**:- Under this method the materials are issued at a price which is an average price of materials purchased. The simple average is an average of prices without having regard to the quantities involved. Weighted average price is used in order to avoid fluctuation in price and

reduce the number of calculations. Weighted average of the total cost and total quantities of materials purchased. is calculated each time a purchase is made.

e) **Weighted Average Price Method**:- it is based on the assumption that each issue of goods consists of a due proportion of the earlier lots. It uses a weighted average price for pricing the issue of materials until a new lot is purchased when a new weighted price will be calculated. It is calculated as...

$$\text{weighted Average Price} = \frac{\text{Total cost of materials in stock}}{\text{Total quantity of materials in stock}}$$

This method is useful when the quantity of materials in each lot purchased is not uniform.

f) **Base Stock Method**: - this method proceeds on the assumption that a minimum quantity of inventory must be held at all times to use in case emergency arises. It is valued at the cost at which it is acquired and remains unaffected by subsequent price fluctuations. Base stock is carried forward as a fixed asset. The stock in excess of base stock is valued in accordance with some other inventory methods.

## INVENTORY CONTROL

In manufacturing organizations inventories include raw materials, work in progress and finished goods. In trading concerns, inventories consist of merchandise held for sale and packing and other supplies. Inventory control is the technique of maintaining inventory items at desired levels. It is a system which ensures the required quantity of inventories of the required quality, at the required time and with the minimum price. The function of inventory turnover is to obtain maximum inventory turnover with the sufficient stock to meet all requirements. Inventory control is of great importance in almost all types of business organizations. If inventories are kept at high levels due to over production or slow demand, capital is tied up which cannot be used for other productive purposes. Alternatively, production is likely to suffer due to inadequate inventory on hand.

## MATERIAL LOSSES

Some material losses are bound to occur during manufacturing operations due to the nature of materials. These losses may be in the form of scrap, spoilage, defectives or wastage. Scrap is residue for manufacturing operations that has measurable but relatively minor recovery value. It is saleable material resulting from the primary manufacturing operations. Scrap should be accounted for in some manner not only from the point of view of efficiency but because scrap is often a tempting source of theft. If the value of scrap is very insignificant, it is not considered in the cost accounts, on the other hand, if the value of scrap is significant it deducted from the material cost. Spoilage can be defined as the materials which in the process of manufacture are badly damaged or have developed some imperfection which cannot

be economically correct and thus the goods should be sold as seconds. The loss due to spoilage may be charged to a specific product or job on which the spoilage occurred, if it is clearly traceable to the work done on that order. The normal spoilage loss may be charged to factory overhead and thus spread over the cost of all jobs or products. The cost of abnormal spoilage is transferred to the costing profit and loss account. Abnormal loss is unexpected and should have been avoided by the management. 299 Defectives are such semi-finished or finished products which in the process of manufacture have developed some imperfection, but which unlike spoiled materials can be made into imperfect finished articles with additional labour and materials. The accounting treatment for defectives is similar to that relating to spoiled goods. Wastage generally, refers to that portion of raw materials which are lost in storing, handling and in manufacturing process. It does not possess any recovery of realizable value. Waste can be classified as normal and abnormal waste. Normal waste is expected and uncontrollable. It is valued like good output. Its cost is transferred to the costing profit and loss account.

### **STORE RECORDS/MATERIAL RECORDING**

The important function of the storekeeper is to maintain records of receipts, issues and balances of various items of materials. Bin Card and store ledger are two important stores records that are kept for making a record of the various items at stores:

**BIN CARD:** A bin is a place where the materials are stored. It may be a shelf, an aluvarch, open space etc. depending upon the nature of the commodity. A bin card provides a quantitative record of the receipts, issues and balance of materials. The bin cards are usually attached to or placed near to the bin so that receipts and issues may be entered therein as soon as they take place. Separate bin cards are prepared for each item of stores. Thus, bin card provides a continuous record of the stock in each bin and assist the storekeeper to control the stock. For each materials, the maximum stock to be held are noted on the card. An ordering level is also indicated therein so that fresh supplies may be ordered before the minimum is reached.

**STORES LEDGER:** stores ledger is a subsidiary ledger in which separate account is opened for each item of materials in the store to record both the quantity and cost of the materials received, issued, returned and in hand. The basic objective of stores ledger is to provide a continuous record of both quantity and cost of materials received, issued returned and in hand. Entries in stores ledger is made on the basis of...

- 1- Materials received notes
- 2- Material requisition slips
- 3- Material returned notes

### **INTRODUCTION TO LABOUR CONTROL AND DOCUMENTS**

Labour is an essential factor of production. It is a human resource and participates in the process of production. Wages paid to labour is a significant item of cost. The labour cost should be distinguished between direct and indirect labour. Direct labour

cost can be identified with and charged directly to the product or a job whereas, indirect labour cost is not so identifiable and, therefore, it is included in overheads which may be allocated to different products or department on some suitable basis. Cost accounting for labour has three primary objectives :-

- a) Determining labour costs in the cost of product or service
- b) Reporting labour costs for planning and control and
- c) Reporting labour costs for decision-making.

### KEY TERMS

1- **RE ORDER LEVEL:** this level lies between minimum and maximum levels in such a way that before the material order is received in stores, there is sufficient quantity on hand to cover both normal and abnormal consumption situations. In other words, it is the level at which fresh order should be placed for replenishment of stock. Its formula is...

Re order level = maximum reorder period \* maximum usage

Or

= minimum level + (average rate of consumption \* average time to obtain fresh supplies)

2- **ECONOMIC ORDER QUANTITY:** Re order quantity is the quantity for which order is placed when the stock reaches re order level. It is known as economic order quantity when it is the quantity which is most economical to order. EOQ refers to the quantity of inventory, at which total of ordering costs and the carrying costs is minimum. At EOQ the ordering costs are equal to carrying costs.

$$EOQ = \sqrt{2 \text{ (Annual consumption) (ordering cost) / (Carrying cost)}}$$

3- **ORDERING COST:** the term ordering cost refers to the costs incurred for acquiring inputs. These include...

- a- Cost of placing an order
- b- Cost of transportation
- c- Cost of receiving goods
- d- Cost of inspecting goods

- 4- **CARRYING COST:** the term carrying cost refers to the costs incurred in maintaining a given level of inventory. These costs include...
- a- Cost of storage
  - b- Cost of handling materials
  - c- Cost of insurance
  - d- Cost of deterioration or obsolescence
  - e- Cost of store staff
- 5- **MINIMUM LEVEL/SAFETY STOCK:** the lowest figure of inventory balance, which must be maintained in hand at all times, so there is no stoppage of production due to non-availability of inventory.
- Minimum level of inventory = re order level – (average rate of consumption \* avg. time of inventory delivery)
- 6- **MAXIMUM LEVEL:** it indicates the maximum figure of inventory quantity held in stock at any time. Stock should not exceed this quantity. The quantity is fixed so that there may be no overstocking.
- Maximum stock level = re order level + re order quantity –(min. consumption \* minimum re order period)
- 7- **DANGER LEVEL:** it is the level of inventory at which normal issues of the raw material inventory are stopped and emergency issues are only made. The purchase officer will make special arrangements to get the materials which reach at their danger levels so thaty the production may not stop due to shortage of materials.
- 8- **MATERIAL SCRAP:** it is the incidental material residue from certain types of manufacturing processes usully of small amount and low value, recoverable without further processing. It is always visible. The net sale proceeds of scrap is credited to Costing Profit & Loss Account.

### **LABOUR CONTROL**

Labour cost is an important part of total cost of production. Therefore, there is a need for effective control over labour and labour– related costs. Various

departments contribute to the efficient utilisation of labour and adequate control over costs. Personnel department has to provide an efficient labour force. The engineering department maintains control over working conditions and production methods for each job and department or process by preparing plans and specifications. Timekeeping department maintains an accurate record of the time spent by each employee. Preparation of the pay roll from the clock cards, job or time tickers or time sheets is done by the pay roll department. The Cost Accounting department is responsible for the accumulation and classification of all data of which labour costs are one of the most important items.

### **TIME KEEPING**

As the labour costs constitute a significant portion of the total cost of a product, proper recording of time and collection of cost data are prerequisites of any system of labour cost control. Time keeping is a system of recording the time of arrival and departure of workers. It provides a record of total time spent by the workers in the factory. In addition to recording of time of arrival and departure of workers it is also necessary to record time spent by workers on each job, order or process which is known as time booking. The system of time booking may be maintained either manually or mechanically. Time recording clocks may be used to enter the time of starting and finishing each job separately on the job cards. Time booking can be made with daily time sheets, weekly time sheets or job cards.

### **PAYMENT OF WAGES**

Every organization has to maintain a system of payroll accounting for the purpose of computing wages payable to workers. The work involves the calculation of wages, deductions, net wages payable to employees etc. The gross wages payable to each worker are computed with the help of time card, job card or piece work card. Certain statutory deductions are also made from the gross wages. The wage sheet is prepared showing the gross wages, deductions and net wages payable to workers. It is prepared at periodical intervals according to the time of wage payment. Normally, wage sheet are prepared separately for department. But this wage sheet should be checked properly to minimize the possibilities of wrong payments either deliberately or inadvertently. Detection and prevention of both errors and frauds, including the checking for dummy workers in wage sheet, need attention to ensure accuracy in wage payments.

### **METHODS OF WAGE PAYMENTS**

The two main principal methods of wage payment are as follows:

**1)- TIME RATE WAGE SYSTEM:** it is the oldest method payment.

Under this method of wage payment, the worker is paid at an hourly, daily, weekly or monthly rate. It has the following features...

- i- A worker is paid a fixed rate per hour or per day or per month for the time devoted by the worker,
- ii- The time rate may be fixed with reference to rate prevailing in the industry for similar work. But it must be noted that this rate must not be less than the minimum wages fixed under the Minimum Wages Act or any other Act for the time being in force.
- iii- Output produced by the worker is not relevant for calculating wages.

2)- **PIECE RATE SYSTEM( payment by result)**: under this system of wage payment, a fixed rate is paid for each unit produced, job completed or an operation performed. Thus, payment is made according to the quantity of work done and no consideration is given to the time taken by the workers to perform the work.

#### **TYPES OF PIECE RATE WAGE SYSTEM**

- A- STRAIGHT PIECE RATE SYSTEM:** it is the simplest method of payment by result in which payment is made according to the number of units produced at a fixed rate per unit. It has another variant under which a piece rate with guaranteed time rate is assured for more wages earned under piece rate as compared to time wage earnings.
- B- TAYLOR'S DIFFERENTIAL PIECE RATE SYSTEM:** the underlying principle of this system of wage payment is to penalise a slow worker by paying a lower piece rate for low production and to reward an efficient worker by giving him a higher piece rate for a higher production. Under it a standard time is fixed for each work. Two piece rates are fixed- (i) a lower rate i.e. 80% of normal piece rate for the worker who produces below the standard output, (ii) a higher rate i.e. 120% of normal piece rates for the worker who produces standard output or more than the standard output.
- C- MERRICK'S MULTIPLE/DIFFERENTIAL PIECE RATE SYSTEM:** this method seeks to make an improvement in the Taylor's differential; piece rate system. Under this method, three piece rates are applied for workers with different levels of performance. Wage are paid at ordinary piece rate to those workers whose performance is less than 83% of the standard output,

110% of the ordinary piece rate is given to workers whose level of performance is between 83% and 100% of the standard output and 120% of the ordinary piece rate is given to workers who produce more than 100% of the standard.

**D- GANT'S TASK AND BONUS PLAN:** under this plan a standard time is fixed for doing a particular task, worker's actual performance is compared with the standard time and his efficiency is determined. If a worker takes more time than the standard time to complete the task, he is given wages for the time taken by him and if a worker takes the standard time to perform the task, he is given wages for the standard time and a bonus of 20% of piece wages. Thus, with every reduction in time, the plan ensures progressive increase in total wages. Due to this reason, the plan is also known as progressive rate system.

### **INCENTIVE SYSTEM/PREMIUM And BONUS PLAN**

Incentive or bonus may be defined as "the stimulation of effort and effectiveness by offering monetary inducement or enhanced facilities". It may be monetary or non-monetary. It may be provided individually to every worker or collectively to a group of workers. The basic objective of incentive is to improve productivity and increase production so as to bring down the unit cost of production.

This system of wage payment is between the time wage payment and piece wage work system. In this system, both the worker and the employer share the labour cost of the time saved.

### **TYPES OF PREMIUM AND BONUS PLANS/INCENTIVE SYSTEM**

1- **HALSEY PREMIUM PLAN:-** under this system, standard time for doing each job or operation is fixed and the worker is given wages for the actual time he takes to complete the job or operation at the agreed rate per hour plus bonus equal to one half of the wages of the time saved in the usual course. And is calculated as follows...

$\text{TIME TAKEN} \times \text{RATE PER HOUR} + \% (\text{STANDARD TIME} - \text{TIME TAKEN}) \text{RATE PER HOUR}$

OR

$T \times R + \% (S-T) R$

### FEATURES OF HALSEY PREMIUM PLAN

- a- Standard time is fixed for each job,
- b- It guarantees the hourly wages to workers for the actual time taken,
- c- Bonus is paid if the time is saved (i.e. when actual time taken is less than the standard time),
- d- Bonus is equal to 50% of the time wages of the time saved.

2- **ROWAN PLAN:** Under this method, the worker is guaranteed wages at the ordinary rate for the time taken by him to complete the job or operation. The difference between the Halsey plan and Rowan plan is only in the calculation of the bonus. Under Rowan plan bonus is that proportion of the wages of the time taken which the time saved bears to the standard time allowed. Formula for calculation of wages is as follows...

$$\frac{(T \times R) S - T \times T \times R}{S}$$

### FEATURES OF ROWAN PREMIUM PLAN

- a- Standard time is fixed for each work,
- b- It guarantees the hourly wage to workers for the actual time taken,
- c- Bonus is paid if the time is saved (i.e. actual time is less than the standard time)
- d- Bonus is that proportion of time wages as time saved bears to the standard time

### IDLE TIME

Idle time is a period or duration for which workers are paid but they have not worked for production in the factory. When workers are paid on time basis, some difference between the time for which they actually spend upon production is bound to arise. Idle time does not include holidays, leave etc. It may be normal in nature or abnormal. Normal idle time is that idle time which is unavoidable; it is of normal nature and is inherent in a production or work environment. Normal idle time is

caused due to the movement of workers. Abnormal idle time is that time which is not caused by the usual routine of production. The time wasted by the workers may represent abnormal idle time. The loss incurred by abnormal conditions cannot be considered as part of the cost of the product and should be transferred to the Costing Profit and Loss A/c. For example time lost due to break down of machinery, lack of materials, strikes, lock out etc.

## **OVERTIME**

Overtime is the time put in by the workers and work done by them beyond normal hours of work. It is an extra time over and above the schedule hours of work. Factories Act, 1948, provides that every worker is to be paid overtime at a higher rate, normally at double the normal wage rate, if he is called overtime to work more than 8 hours a day. The excess over normal wage rate is called overtime premium. Overtime may be considered useful when there is an urgency, company needs extra production or when the workers are less than the required number. In cost accounting, overtime premium should be separated from regular earning and charged as follows;- Nature of Overtime Charged to

- a. Customers request to complete the job early Job directly
- b. General pressure of work General Overhead
- c. Delayed Schedule Department
- d. Unavoidable Reasons Costing P & L A/c e.

Seasonal rush and peak load Prime cost Overtime payments made to workers engaged in direct labour are treated as direct cost and overtime payments made to indirect labour are treated as part of factory overheads.

## **INTRODUCTION TO OVERHEADS**

All indirect costs are collectively termed as overheads. It is total of all indirect material, indirect labour and indirect expenses. They constitute an important component of total cost of a product, a job or a process. Overhead costs have to be incurred for production although they are not directly measurable, observed related to specific activity or unit of production. For example, depreciation of factory building and machinery, rent, taxes, insurance, maintenance etc.

## **CLASSIFICATION OF OVERHEADS**

The process of grouping the overheads according to their common characteristics is known as classification of overheads. It provides the manager with information that enable them to manage the business effectively. The overheads can be classified according to:

- a) Element : Indirect materials, Labour Expenses;

- b) Functions : Production, Administration, Selling and Distribution overheads;
- c) Behaviour : Fixed ,Variable, and Semi-variable overheads
  - i) Fixed overheads remain fixed and are unaffected by the changes in the level of production. For example, rent, rates, salaries, legal expenses etc.
  - ii) Variable overheads vary in direct proportion to changes in the volume of production, such as indirect materials, fuel, power, stationery, salesmen's commission etc.
  - iii) Semi- variable overheads are the expenses which are partly fixed and partly variable. They remain fixed up to a volume of production and vary when the production is made beyond the particular volume. For example, telephone charges depreciation of machinery, repairs and maintenance, cost of supervision etc.

### **COLLECTION AND CODIFICATION OF OVERHEADS**

Overheads are collected and codified under proper heads. Similar overhead cost items should be grouped together. The grouping of overheads is done through a technique called 'Codification'. It is a method of identification and describing various overhead expenses in numbers or letter or in combination of both, so that cost data can be easily collected. Codification of the entire items is done through a proper coding system. Overheads are collected through the sources of stores requisitions, financial accounts, wage sheets, registers and reports.

### **ALLOCATION OF OVERHEADS**

Allocation of overheads is the 'allotment' of all items of cost of cost centres or cost to units. It refers to charging overheads to the cost centres. It means that overheads have been incurred because of the existence of that cost centre. When the company provides more than one product, factory overheads are allocated to various production departments or cost centres. Proper overheads allocation is of great importance as wrong allocation can distort income determination, asset valuation and performance evaluation. The overhead allocation process is as follows:-

- i) Accumulating overheads on the basis of departments or products.
- ii) Identifying the cost objectives of the allocated costs
- iii) Selecting the method of relating costs so accumulated to the cost objectives.

### **APPORTIONMENT/ABSORPTION OF OVERHEADS**

Apportionment of Overheads refers to the distribution of common items of cost to two or more cost centres on some appropriate basis. When overheads are incurred for the factory as a whole and benefit two or more cost centres, it is necessary to apportion them to different departments that receive benefits from such overhead costs. For example, factory rent benefits all the departments, hence it should be

apportioned to all the departments on the basis of the floor area occupied by each department in factory.

Thus, common factory overheads have to be apportioned to various production and service departments in the factory on some appropriate basis. A production department is one that engages in the actual manufacture of product. On the other hand, service department is one that renders a service which contributes indirectly in the manufacture of the product. It renders services to the production as well as other service departments. The common factory overheads are to be apportioned to various production and service departments on some equitable basis which are called principles of apportionment. Accordingly, overheads are distributed over various departments on the basis of actual benefit received or potential benefits to be received by the respective departments. Overheads can also be apportioned on the specific criteria or given ratio which may be determined after careful survey for different service functions.

Apportionment of overheads can also be made on the basis of ability to pay (Revenue) of the departments. The usual basis of apportionment of common items of factory overheads can be stated as follows:-

Items of Overheads	Basis of Apportionment
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- a. Rents rates, taxes and Insurance - Floor space/ area occupied depreciation & repairs of buildings
- b. Canteen, welfare expenses - No. of employees Time keeping & Personnel office
- c. Depreciation, repairs & maintenance - Capital cost of machinery & Insurance of machinery
- d. Power, steam, lighting - Technical estimates (HP hours)
- e. Compensation - Direct wages f. Advertising, Packing, Warehousing - Sales value/ volume

UNIT – III

## **NEED FOR RECONCILIATION OF COST & FINANCIAL ACCOUNTS**

The need for reconciliation arises due to the following reasons :

- a) To ensure that no income or expenditure item has been omitted and that there is no under or over recovery of overheads.
- b) To check the arithmetical accuracy, as well as for the determination of reason for disagreement between the two results.
- c) To know the reason for variation of profit or loss as internal control.
- d) To take administrative decisions such as depreciation, stock valuation and direct expenses.
- e) To test the reliability of cost accounts.

### **CAUSES OF DIFFERENCE / REASONS FOR DISAGREEMENT BETWEEN COST AND FINANCIAL RESULT**

It is very essential to know the causes, which generally give rise to disagreement between Cost and Financial Accounts. These are briefly summarised below:-

Expenses that are not taken into account. The under mentioned expenses are usually not included in overheads or, for that matter in cost.

- (a) Expenses or income of purely financial nature like dividends received, rent received, cash discount allowed, etc.
- (b) Expenses or profits of capital nature like profit or loss on sale of investments, plant and equipment, etc.
- (c) Items not representing actual costs but dependent on arbitrary decisions of management e.g. an unreasonably high salary to the managing director, providing for depreciation at a rate exceeding the economic rate.
- (d) Appropriation of profits for dividends, payment of income tax and transfer to reserves.

#### **I) Items recorded in financial books only and not in cost books:**

- a) Interest received/ paid on Debentures,
- b) Interest received and paid on Investment and Bank loan or overdraft respectively.
- c) Interest charged/ paid to debtors /creditors
- d) Discount allowed/ received.
- e) Provision for discount on debtors/ creditors
- f) Bad Debts written off/ bad debts recovered.
- g) Discount on issue of shares and debentures.
- h) Income tax paid /refund
- i) Penalty and fines paid / received
- j) Rent received/ paid
- k) Loss by fire, natural calamities or theft /damage recovered.
- l) Loss/ profit on sale of fixed assets, investment m) Cost of share transfer /share transfer fees received.
- n) Donation given/received
- o) Deferred revenue expenses written off. Such as write off of :
  - i. Preliminary Expenses
  - ii. Discount on Shares/ Debentures

#### **II) Items recorded in cost book only and not in financial books:-**

- a) Notional rent charges of owned premises
- b) Salary of proprietor

c) Interest on proprietors fund

**III) Items recorded in both books with different amounts:-**

In Cost book and Financial book some item of expenses and incomes which are treated differently such as –

a) Method of charging depreciation: In Financial Books depreciation may have been provided, on Straight Line Method or Written down Value Method whereas in Costing Book depreciation may have been charged on the basis of Machine Hour Rate Method. Amounts of depreciation charge in both books are bound to be different.

b) Under and Over recovered expenses: The expenses in costing books are recorded on the basis of predetermined rates but in financial books they are recorded on actual basis hence the amount recorded in these two set of books differ.

c) Method of Valuing Stocks:- It is well known that in Cost Book Stocks are only valued at cost. But in Financial Books stock are valued either at cost or market price, whichever is lower.

### **PROCEDURE FOR RECONCILIATION**

When there is a difference between the profit/loss shown by cost accounts and financial accounts the procedure for reconciliation is similar to that of Bank Reconciliation Statement. For reconciliation following steps should be considered.

1. Prepare a cost sheet for a particular period and find out costing profit or loss if it is not given.
2. If financial profit or loss is not given then find out the same by preparing Trading and Profit and loss account for a period which corresponds to the cost sheet.
3. Ascertain items which are shown in financial account and not in cost account.
4. Ascertain items which are shown in cost account only.
5. Calculate difference between expenses recorded in financial books and the amount of expenses recorded in cost accounts.
6. Reconciliation Statement is to be prepared as on a particular date.

Hence one can start with the figure of profit / loss as per cost account and arrive at the figure of profit/ loss as per financial accounts or vice –versa. [Entries which are at variance with each other will appear in Reconciliation Statement and also entries appearing in only one set of book (non - common items)]

### **UNIT OR BATCH COSTING**

Unit costing is a method of costing under which the cost of a unit is ascertained by dividing the total cost by the number of units produced. It is used in the industries which are engaged in manufacturing exclusively one homogeneous product or a few grades of the same product. It is also called as single or output costing. Unit is also called as single or output costing. Unit cost is the average cost of production. The examples of industries are Cement, Paper, Sugar, Steel etc. The computation of cost is done in the form of cost sheet. Batch costing is concerned with producing a large quantity of products which could be stocked and sold later on.

A batch is a cost unit consisting of a group of identical items which maintain their identity through one or more stages of production. A lot is the quantity of product which can be conveniently and economically produced and costed. The companies which produce shoes, medicines, drugs and nuts & bolts use this method of costing. In batch costing the cost unit is a batch of specific quantity of identical products. In batch costing each batch is given a definite order number. All the costs relating to the batch are accumulated. After completion of batch or order the cost sheet is totaled and the total cost is divided by the total quantity produced in order to determine the cost per article

## **JOB COSTING**

Job costing is a method of costing which is applied to determine the cost of specific job of production generally manufactured according to customers specification. All the jobs are not similar. They do not pass through the same manufacturing process. Each job requires different amount of materials and labour and different levels of skills. Therefore, the cost of each job differs from other. The cost is recorded separately for each job. Each job or batch is regarded as a cost unit from the view point of accumulation.

For example, Printing jobs, Automobile repairs, Hospitals, Ship-univers have to follow job costing. A job cost sheet is prepared on receipt of an order. A specific number is allotted to each job put into production. General information in respect of the job is recorded at the top of the job-sheet. Appropriate inputs are recorded in the job cost sheet regarding direct materials, labour and overheads. Additional information such as labour-hours, machine hours, quantity and quality of materials used are also recorded for the purpose of planning controlling cost and evaluating performance. Finally the profit or loss on the job can be easily determined. The job cost sheet also provides for the comparison of the actual cost with the estimated costs.

## **CONTRACT COSTING**

Contract Costing is the form of specific order costing which applies where work is undertaken to customer's special requirements and each order is of long duration. It is a special type of job costing where the unit of cost is a single contract. Contract itself is the cost centre and it is executed under the specifications of a customer. Contract Costing is mainly used by Civil Engineers who undertake long term projects such as construction of road, bridge, building etc. it is similar to job costing. It has following features.

- (i) The work is done at a site which is generally away from the contractor's premises.
- (ii) The contract takes more than a single accounting period.
- (iii) Most of the expenses are chargeable directly to the contracts.
- (iv) Each contract is distinct and dissimilar from other contracts.

## **MAIN TERMS**

(a) **Contract** : A contract is a legally enforceable agreement. It is an agreement between contractor and contractee which contains the terms and conditions in relation to a job.

(b) **Contractor** : The person who undertakes to do the job is a contractor.

(c) **Contractee** : The person for whom the job is being done is the contractee.

(d) **Contract Price** : It is the amount agreed to be paid by the contractor as consideration for the job to be done.

(e) **Work certified** : It is the quantum of work done by the contractor and certified by the technical assessor (surveyor or architect) appointed by the Contractee in terms of the contract.

(f) **Work uncertified** : It is the value of work completed by the contractor but not certified by the Architect or Surveyor at the end of the accounting period.

(g) **Retention Money** : It is the amount in respect of the portion of work certified and retained by the contract with firm as security deposit on account of any loss that may arise due to defects in the work noticed in future.

### **RECORDING COSTS ON CONTRACT**

Under Contract Costing, a contract is basically the cost unit and it is regarded as a cost centre for the purpose of control. A separate contract account is opened for individual contract for the purpose of determination of profit or loss on each contract. The following costs are recorded in the contract account.

(1) **Materials** :- Materials are normally purchased and delivery obtained at the site. Excess materials, if any, may either be sold at site or returned to the store. Sometimes, materials are sent from one site to another. All the materials purchased or sent from the stores or another site are debited to contract account and materials sold or returned to stores are credited to the contract. Materials on hand at the end of the accounting period are credited to contract account.

(2) **Labour** : It is easy to allocate major part of the labour to contract account. A muster is maintained at the site for the contract. Labour cost is accumulated and debited to each contract. Some workers are deputed from one site to another for some time which is debited to the respective contract on the basis of the time spent on each contract. At the end of the accounting period, the amount of outstanding labour charges is determined and also debited to the contract account.

(3) **Plant & Tools** : The contract account is debited to the extent of the depreciation of the plant or tools used for the period on each contract.

(4) **Sub-Contracting** : A part of the work may be given to another contract or which is called sub-contracting. The entire amount paid to the sub-contractor is debited to the particular contract account.

(5) Work in Progress : At the end of the accounting period an incomplete contract will appear as an asset in the balance sheet. The work in progress includes the following :

Cost of work Certified	xxx
Cost of work uncertified	xxx
Profit taken credit for	xxx
Total	***
Less : Account received from the Contractee	xxx
Work in Progress	xxx

The value of work in progress is the balance on the contract account which is carried down to the following accounting period.

### **DETERMINATION OF PROFIT ON INCOMPLETE CONTRACTS**

The difference on the two sides of contract account naturally indicates the profit or loss on the contract and is transferred to costing profit and loss account. When the contract is incomplete at the end of the costing period, several adjustments are usually necessary to close the books. It is the general rule that profit cannot be anticipated and taken credit for. Therefore, profit earned on a contract must be recognized only on the completion of the contract. However, large contracts are hardly completed in the year of commencement. They extend over a number of accounting periods. Therefore, it is advisable to take credit for profit where it is anticipated. In such a case it is always good that profit is conservatively calculated and only a percentage of total estimated profit on the complete contract equivalent is transferred to the general profit and loss account. The following principles must be borne in mind in determined the amount of profit to be taken credit for :

(i) The stage of completion of the contract is determining as follows :  $\text{Work Certified} = \text{Contract Price} \times 100$

(ii) It is conventional to classify incomplete contracts on the basis of the stage of completion as under :

(a) If the work completed is less than 25%, then no profit is taken credit for during that accounting period.

(b) If the work completed is 25% to 50%, one third of profit is taken credit for during that period.

(c) If the work completed is more than 50% but less than 75%, half of the profit is taken credit for during that period.

(d) If the work completed is more than 75 % but less than 90 % two third of the profit is taken credit for during that period and

(e) If the work is almost completed and very insignificant portion is remained, estimated cost of expenses for the outstanding work is charged, to the cost and the entire profit is taken credit for during the period. Even here, it is considered improper to take the entire estimated profit to the profit and loss account when cash for the work done is not received. The portion of profit for which credit can be taken is determined by using the following formula :

Cash received Profit = Estimated Profit x ----- Work Certified Since the cash received from the contractee is normally less than work certified, this method is suitable for conservatism principles

UNIT – IV

## **PROCESS COSTING**

### **Introduction: PROCESS COSTING**

Process costing is a method of costing in which the cost of each process is ascertained and the same is absorbed by the output of that process. It is a product costing system which is applied to manufacturing concerns in producing large volume of similar products with continuous flow or process. In a process costing system the type of production is such that a continuous flow of output of identical products is produced. There is no unit with an individual identity because each unit is part of a process. This method is used in industries like chemicals, textiles, rubber, cement, sugar, coal etc. It can also be used in the assembly type industries which manufacture items like typewriters, automobiles, radios and TV's etc. Therefore, process costing is usefully applied when products are manufactured under conditions of continuous processing or under mass production method.

### **FEATURES OF PROCESS COSTING**

A Process cost system has the following features :

- (i) The factory is divided into departments or process which are limited to a certain operation.
- (ii) Manufacturing costs are accumulated for each production department or process.
- (iii) The manufacturing cost are accumulated by department or process for specific period.
- (iv) Process costing is an averaging process.
- (v) Each process or department has its own account for recording the processing costs.
- (vi) The production is continuous and emphasis is uniform or standardized product.
- (vii) The unit completed in one process are transferred to the next process together

with costs associated with them. Completed units are transferred to finished goods.  
(viii) Wastages or cost of spoiled units is added to the cost of good units produced which increases the average cost per unit.

### **PROCESS COSTING PROCEDURE**

Specific accounting procedure is followed in order to accumulate production costs by process and to compute unit costs. A separate account is maintained for each process to which all costs of material, labour, direct expenses and overheads are debited. **Materials** : Normally, all materials required for production are issued to the first process. However, extra or new materials may be added to the next process. The cost of materials consumed is debited to the respective process account. **Labour** : Wages and salaries paid to workmen and supervisory staff engaged in a particular process are debited to the concerned process account. When workers are engaged in more than one process, the gross wages are distributed to each process on the basis of time spent on each process.

**Direct Expenses** : Direct expenses, which can be attributed directly to a process, are debited to the respective process account. For example, electricity, depreciation, hire charges of equipments etc.

**Manufacturing Overheads** : Overheads are generally high in the process costing. The overheads have to be analysed and apportioned on some equitable basis over the different processes involved. Overheads may be apportioned on a predetermined rate based on direct wages or prime cost.

### **TREATMENT OF PROCESS LOSS IN PROCESS COSTING**

In many processes, a loss of weight may arise in the course of manufacture. In process industries, production losses are inevitable and output is always less than the input. Thus, when the output is less than the input the difference is known as process loss. Even though the loss is inevitable, it is still essential that accurate records are maintained and suitable steps are taken to minimize the process loss. Since it affects the production costs, it should be pointed out to the foremen and supervisors for ensuring efficiency in the use of material in future. They may have keen inspection at each stage of production and losses can be reduced in future. Process loss can be divided into two categories

- (i) **Normal loss** :- Certain losses can be anticipated and an estimate of such loss can be made depending upon the material used, production operation involved, equipment used, technology employed and other factors. These losses are inherent in the production operation and are known as normal losses. For example, in the Sugar or Oil Industry the output cannot be equal to the input of sugarcane or oil seed. Normal loss is unavoidable, uncontrollable and expected in normal conditions. It may be inherent in the manufacturing process. When normal loss occurs, the cost of such loss is absorbed in the cost of production of good products i.e. output. Thus,

normal losses are absorbed by good production and its cost shown as nil in the process cost account. However, if the normal loss is in the form of scrap and has some realizable value, the process cost account is credited with the value of scrap.

- (ii) **Abnormal Loss** : Losses which are in excess of normal losses are called Abnormal Losses. These losses are incurred due to abnormal or unexpected conditions like accidents, inferior quality of materials, carelessness of workers and defective plant maintenance. Abnormal process loss is controllable and avoidable. All losses of this type must be recorded and thoroughly investigated and possible steps should be taken to prevent such losses in future. Abnormal losses are not included in the cost of normal output. The average cost of the lost units is charged to an abnormal loss account which is credited with the scrap and transferred to profit and loss account. The value of abnormal loss is determined as under :

$$\text{Cost of Production} - \text{Scrap Value} \div \text{Output (no of units)} = \text{Abnormal loss per unit}$$

The value of abnormal loss is debited to Abnormal Loss Account and credited the process Account. The scrap value of abnormal loss is credited to Abnormal Loss Account. The balance so Abnormal loss account is transferred to the Profit and Loss Account.

### **TREATMENT OF PROCESS GAIN IN PROCESS COSTING**

**Abnormal Gain:** Abnormal gain arises when the actual loss is less than the normal loss expected. When the loss is less than expected, the result is abnormal gain. The value of abnormal gain is calculated in a similar manner to an abnormal loss and such value is debited to the concerned Process

Account and Credited to a separate account called Abnormal Gain Account. The amount of scrap which would otherwise have been realized had there been normal loss and no abnormal gain is debited to the abnormal gain account. The balance of abnormal gain account is finally transferred to the Profit and Loss Account.

**Normal Gain:**

### **JOINT PRODUCT AND BY PRODUCTS**

Most of the industries carry out multiple production in their factories. Two or more products can be produced simultaneously from the use of a single raw material. There are many industries which produce Joint Product and By Products. Some examples of industries where Joint Products and By Product are produced are as under :

Industry Joint Products and By products Oil Oil Oil Cakes Dairy Butter, Cream, Ice-cream Steel Iron, Steel Sugar Sugar, Paper, Country Liquor.

**Joint Products** : When two or more products are separated in the course of processing, each having a sufficiently high saleable Value, these are called joint products. Thus a joint product is any output of a manufacturing process producing multiple products that add significantly to the total market value of all output. Joint products require simultaneous common processing. They have a physical relationship and processing of one of 340 the joint products simultaneously results in the processing of the other joint products. Joint products are the primary objectives of manufacturing process.

**By Products** : By products is a product which is recovered incidentally from the material used in the manufacture of main product. The value of By product is generally less than the values of main products. Thus a product which is secondary to the main product and obtained during the course of manufacture of main product is a By product. By-product is generally subject to further processing after separation from the main product. When income from By product is negligible, it is treated as miscellaneous income. However, when the income from By product is considerable, the market value of the By product after deducting costs and expenses incurred from the point of separation to the actual sales should be credited to the main product process account. If the By product is sold after further processing the main product process cost account must be credited with the market value of the By product after deducting the further processing charges from the point of separation.

### **INTER-PROCESS PROFITS**

The difference between cost and transfer price is known as inter-process profits. Transfer price may be market price or cost plus a fixed percentage of profit. In some process industries, the output of one process is transferred to the next process not at cost but at a price showing profit to the transferor process.

### **INTER-PROCESS PROFITS**

Sometimes the output of one process is transferred to a subsequent process, not at cost, but at a price showing a profit to the transferor process. Transfer price may be made at a price corresponding to current wholesale market price or at cost plus an agreed percentage. The difference between cost and the transfer price is known as an inter process profits. The objectives are...

- i- To show whether the cost of production competes with the market price,
- ii- To make each process stand on its own efficiency and economies, which means that the transferee processes are not given the benefits of economies affected in the earlier process.