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DEPARTMENT OF BUSINESS ADMINISTRATION

SUBJECT: PRODUCTION MANAGEMENT  
SUB.CODE: 16ACBB4

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UNIT V

#### DEFINITION OF MATERIAL MANAGEMENT:

“Material management is the planning, directing, controlling and coordination of all those activities concerned with material and inventory requirements, from the point of their inception to their introduction into the manufacturing process.”

#### IMPORTANCE OF MATERIAL MANAGEMENT:

Material management is a service function. It is as important as manufacturing, engineering and finance. The supply of proper quality of materials is essential for manufacturing standard products.

#### The importance of material management may be summarized as follows:

Material management is essential for every type of concern.

1. The material cost content of total cost is kept at a reasonable level. Scientific purchasing helps in acquiring materials at reasonable prices. Proper storing of materials also helps in reducing their wastages. These factors help in controlling cost content of products.
2. The cost of indirect materials is kept under check. Sometimes the cost of indirect materials also increases total cost of production because there is no proper control over such materials.
3. The equipment is properly utilized because there are no breakdowns due to late supply of materials.
4. The loss of direct labour is avoided.

5. The wastages of materials at the stage of storage as well as their movement is kept under control.
6. The supply of materials is prompt and late delivery instances are only few.
7. The investments on materials are kept under control as under and over stocking is avoided.
8. Congestion in the stores and at different stages of manufacturing is avoided.

### **FUNCTIONS OF MATERIAL MANAGEMENT:**

Material management covers all aspects of material costs, supply and utilization. The functional areas involved in material management usually include purchasing, production control, shipping, receiving and stores.

### **The following functions are assigned for material management:**

#### **1. Production and Material Control:**

Production manager prepares schedules of production to be carried in future. The requirements of parts and materials are determined as per production schedules. Production schedules are prepared on the basis of orders received or anticipated demand for goods. It is ensured that every type or part of material is made available so that production is carried on smoothly.

#### **2. Purchasing:**

Purchasing department is authorized to make buying arrangements on the basis of requisitions issued by other departments. This department keeps contracts with suppliers and collects quotations etc. at regular intervals. The effort by this department is to purchase proper quality goods at reasonable prices. Purchasing is a managerial activity that goes beyond the simple act of buying and includes the planning and policy activities covering a wide range of related and complementary activities.

#### **3. Non-Production Stores:**

Non-production materials like office supplies, perishable tools and maintenance, repair and operating supplies are maintained as per the needs of the business. These stores may not be required daily but their availability in stores is essential. The non-availability of such stores may lead to stoppage of work.

#### **4. Transportation:**

The transporting of materials from suppliers is an important function of materials management. The traffic department is responsible for arranging transportation service. The vehicles may be purchased for the business or these may be chartered from outside. It all depends upon the quantity and frequency of buying materials. The purpose is to arrange cheap and quick transport facilities for incoming materials.

#### **5. Materials Handling:**

It is concerned with the movement of materials within a manufacturing establishment and the cost of handling materials is kept under control. It is also seen that there are no wastages or losses of materials during their movement. Special equipment may be acquired for material handling.

#### **6. Receiving:**

The receiving department is responsible for the unloading of materials, counting the units, determining their quality and sending them to stores etc. The purchasing department is also informed about the receipt of various materials.

### **PURCHASING AND PROCEDURE:**

#### **MEANING:**

Purchasing is the first phase of Materials Management. Purchasing means procurement of goods and services from some external agencies. The object of purchase department is to arrange the supply of materials, spare parts and services or semi-finished goods, required by the organisation to produce the desired product, from some agency or source outside the organisation.

#### **DEFINITION:**

In the words of Alford and Beatty, "Purchasing is the procuring of materials, supplies, machines, tools and services required for equipment, maintenance, and operation of a manufacturing plant".

According to Walters, purchasing function means "the procurement by purchase of the proper materials, machinery, equipment and supplies for stores used in the manufacture of a product adopted to marketing in the proper quality and quantity at the proper time and at the lowest price, consistent with quality desired."

### **Importance of Purchasing:**

1. Purchasing function provides materials to the factory without which wheels of machines cannot move.
2. A one percent saving in materials cost is equivalent to a 10 percent increase in turnover. Efficient buying can achieve this.
3. Purchasing manager is the custodian of his firm's purse as he spends more than 50 per cent of his company's earnings on purchases.
4. Increasing proportions of one's requirements are now bought instead of being made as was the practice in the earlier days. Buying, therefore, assumes significance.
5. Purchasing can contribute to import substitution and save foreign exchange.
6. Purchasing is the main factor in timely execution of industrial projects.
7. Materials management organisations that exist now have evolved out of purchasing departments.
8. Other factors like:
  - (i) Post-war shortages,
  - (ii) Cyclical swings of surpluses and shortages and the fast rising materials costs,
  - (iii) heavy competition, and
  - (iv) Growing worldwide markets have contributed to the importance of purchasing.

### **Objectives of Purchasing:**

The purchasing objective is sometimes understood as buying materials of the right quality, in the right quantity, at the right time, at the right price, and from the right source. This is a broad generalisation, indicating the scope of purchasing function, which involves policy decisions and analysis of various alternative possibilities prior to their act of purchase.

**The specific objectives of purchasing are:**

1. To pay reasonably low prices for the best values obtainable, negotiating and executing all company commitments.
2. To keep inventories as low as is consistent with maintaining production.
3. To develop satisfactory sources of supply and maintain good relations with them.
4. To secure good vendor performance including prompt deliveries and acceptable quality.
5. To locate new materials or products as required.
6. To develop good procedures, together with adequate controls and purchasing policy.
7. To implement such programmes as value analysis, cost analysis, and make-or-buy to reduce cost of purchases.
8. To secure high caliber personnel and allow each to develop to his maximum ability.
9. To maintain as economical a department as is possible, commensurate with good performance.
10. To keep top management informed of material development which could affect company profit or performance.
11. To achieve a high degree of co-operation and co-ordination with other departments in the organisation.

## **PROCEDURE FOR PURCHASING:**

**Following purchasing procedure is generally followed:**

### **1. Determining Purchase Budget:**

The Purchase Manager prepares a purchase budget for the forthcoming financial year. Purchase budget is prepared with the help of the production planning department. It contains detailed information regarding quantity to be purchased, quality of materials, time of purchase and the sources of procurement. A schedule of materials and components needed for various jobs, known as bill of materials, is also prescribed for working out details of the purchase budget. A bill of materials is also useful in exercising control over the utilization of materials.

## **2. Receipt of Purchase Requisition:**

The purchase officer initiates action for the purchase of materials only when he receives a request for the same. The store-keeper and departmental heads send requisition slips to the purchase department giving details of materials required by their departments etc. A purchase requisition is a form used as a formal request to the purchasing department to purchase material.

This form is prepared by the store keeper for regular stock materials and by the departmental head for specific materials not stocked as regular items. The storekeeper knows when an action or fresh procurements is to be initiated. He will send the requisition when materials reach re-ordering level. He retains one copy of the requisition with him for future reference .It is on the basis of purchase requisition that orders are placed for materials.

## **3. Determining Sources of Supply:**

The Purchase Manager remains in touch with various suppliers of materials. The quotations are invited for the purchase of specific items. After receiving quotations a comparative study is made regarding terms and conditions offered. The factors to be considered include price, quantity, quality, time of delivery, terms of payment, trade discount and reputation of suppliers. After looking at various factors a final decision is taken about the supplier of goods.

## **4. Placing Order:**

After selecting a supplier a formal purchase order is sent for the supply of goods. A purchase order is sent on a printed form and is duly authorized by the purchase manager. This order should contain details about the quantity, quality, price, mode of delivery, terms of payment etc. The purchase order authorizes the vendor to despatch goods specified in it. It establishes a contractual relation between the buyer and the vendor.

## **5. Follow-Up of Purchase Order:**

A purchase order normally bears a date by which the goods must be delivered. It is in the interest of the organization that goods are received in time for keeping uninterrupted flow of materials. The suppliers may be reminded of the date of delivery of goods. A follow-up of purchase order is necessary to receive stocks in time.

## **6. Receipt and Inspection of Materials:**

In big concerns the task of receiving materials is assigned to the purchase department whereas in small concerns this work is done by the store keeper. After unpacking goods their quantity is compared to that given in delivery challans. Any discrepancy in items is

reported to the purchase department. The specifications and quality of goods is also checked at this stage.

## **7. Checking Invoices:**

Lastly, the purchase department checks the invoices supplied by the vendor with that of its own records. The quantity, quality, price, terms etc. are compared with those given in purchase order. After making full checks the invoices are sent to the accounts department for payment.

## **STORE-KEEPING:**

### **Meaning:**

After the completion of the purchase procedure, the next important aspect Of materials management is storekeeping.

### **Definition :**

According to Alford and Beatty “storekeeping is that aspect of material control concerned with the physical storage of goods.”

### **Objectives of store keeping**

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Following are the main objectives of an efficient system of storekeeping:

1. To ensure uninterrupted supply of materials and stores without delay to various production and service departments of the organisation.
2. To prevent overstocking and understocking of materials,
3. To protect materials from pilferage, theft, fire and other risks.
4. To minimise the storage costs.
5. To ensure proper and continuous control over materials.
6. To ensure most effective utilisation of available storage space and workers engaged in the process of storekeeping.

### **Functions of Storekeeping:**

1. Issuing purchase requisitions to the Purchase Department as and when necessity for materials in stores arises.

2. Receiving purchased materials from the purchase department and to confirm their quality and quantity with the purchase order.
3. Storing and preserving materials at proper and convenient places so that items could be easily located.
4. Storing the materials in such a manner so as to minimise the occurrence of risks and to prevent losses due to defective storage handling.
5. Issuing materials to various departments against material requisition slips duly authorized by the respective departmental heads.
6. Undertaking a proper system of inventory control, taking up physical inventory of all stores at periodic intervals and also to maintain proper records of inventory.
7. Providing full information about the availability of materials and goods etc., whenever necessary by maintaining proper stores records with the help of bin cards and stores ledger etc.

#### Working of the stores:

There are four sections in the process of storekeeping viz.

- (a) Receiving section,
- (b) Storage section,
- (c) Accounting section, and
- (d) Issue section.

These are explained as under:

#### (a) Receiving Section:

There are four kinds of inventories received by stores viz., (i) raw materials, (ii) stores and supplies, (iii) tools and equipment, (iv) work-in- progress or semi-finished goods.

Following procedure is followed in receiving these inventories:

- (i) Receiving these incoming materials in stores.
- (ii) Checking and inspection of these incoming materials and stores etc.
- (iii) Recording the incoming materials in goods received.
- (iv) Preparing and forwarding goods inwards note to the purchasing section.

(v) Informing the purchase department about damaged and defective goods and surplus or deficit supplies etc. along with rejection forms and notes.

(vi) Returning damaged or defective goods to the suppliers in accordance with the instructions of the purchase department.

(vii) Forwarding the materials to respective stores and locations where these are to be stored or preserved.

#### (b) Storage Section:

The store room should be located at a convenient and appropriate place. It should have ample facilities to store the materials properly viz. bins, racks and shelves etc. There can be a single store room in case of a small organisation, but a large scale concern can have different or multiple stock rooms in addition to general or main store.

The separate stockrooms may be used for different classes of inventories. The material should be stored in such a manner as to protect it against the risks of damage, destruction and any kind of loss. Each article should have identifying marks viz., stamping, embossing, colour, coding and painting etc. These risks are very useful in locating or identifying an article in the stores.

#### (c) Accounting Section:

This section is concerned with keeping proper records with regard to receipt and issue of materials. The primary task of this section is to undertake the process of inventory control.

#### (d) Issue Section:

The materials should be issued to respective departments on receiving duly authorised requisition slips. An entry should be made immediately on the bin card attached with the bin from where the material has been issued.

Bin cards contain valuable information with regard to receipt and issue of materials, which is greatly helpful in exercising a system of inventory control. These cards are further helpful in determining various levels of materials viz., maximum, minimum, and re-ordering level.

#### Concept of Just-In-Time (JIT)

Just in Time (JIT) production is a manufacturing philosophy which eliminates waste associated with time, labour, and storage space. Basics of the concept are that the company produces only what is needed, when it is needed and in the quantity that is needed.

#### Definition of Just-In-Time (JIT) Method:

Just-In-Time (JIT) is a purchasing and inventory control method in which materials are obtained just-in-time for production to provide finished goods just-in-time for sale. JIT is a demand-pull system. Demand for customer output (not plans for using input

resources) triggers production. Production activities are “pulled” not “pushed” into action.

Objectives of Just-In-Time (JIT) Method:  
JIT aims to achieve the following objectives:

- (i) Zero inventory
- (ii) Zero breakdowns
- (iii) 100% on time delivery service
- (iv) Elimination of non-value added activities
- (v) Zero defects.

Most important features of JIT includes:

- Continuous improvement – Quality, Quantity & Cost
  - Elimination of waste
  - Reduction in Inventory levels – (raw materials, materials in work in progress and finished goods)
  - Set-up time reduction - increases flexibility and allows smaller batches
  - Levelled / mixed production - to smooth the flow of products through the factory
  - Good housekeeping - workplace cleanliness and organization.
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