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INTRODUCTION

Materials refers to the commodity which are used for the production of another commodity directly or indirectly. materials is a wider turn which include raw materials, spare parts, components and stores to be used in the production of goods and services. Material maybe A to type direct and indirect. Direct material those material that can be identified with allocated to the manufacture of a single product stop indirect materials those materials which are not directly related to a particular product.

Meaning and Definitions

Material or inventory control may be defined as **“Systematic control and regulation of purchase, storage and uses of materials in such a way so as to maintain an even flow of production and at the same time avoiding excessive investment in inventories.Efficient material control cuts out losses and wastage of material that otherwise pass unnoticed”**

Objectives Of Materials Control

- i. **Price Control:** The primary objective of materials control is to control the prices of material.
- ii. **Quality Control:** It is disable that materials to be used in production process should be of desired quality so that finish goods of high quality are produced are produced.
- iii. **Waste control:** Materials control insures minimum possible wastage of material at the time of storage in transit of goods from store in production Department one of the important objective material control is to avoid leakage, theft, spoilage etcetera
- iv. **ContinuousAvailability:** Another objectives of material control is to insure continuous availability of all types of material at the proper time so that the production may not be help up for want of materials.
- v. **Regularbalancing:** One of the objectives of materials control is to make available to management the information relating to stock of materials show that planning of procurement of materials can be done by them.

Essential requirement of inventory controls

- i. There should be a central purchasing department under the control of a competent and expert purchase manager.
- ii. There should be proper coordination in all concerned Department, such as production department, purchasing Department, receiving Department, inspection Department, storage and accounting Department etc.
- iii. preparation of budgets concerning materials, supplies and equipment to insure economic in purchasing and use of materials.
- iv. materials requirement should be properly planned.
- v. the storage of all materials should be well planned subject to adequate safeguards and supervision.

Scope of Material Control

I. Techniques of Material Control:

a) **ABC Analysis:** ABC Analysis is known as always better control or “**Proportional Parts Value Analysis**”. ABC Analysis is a technique of inventory control which is aimed at directing control activities to such of those categories of material as demand particular attention. It is also known as “**selective method of control**”. To have effective and proper control on stores all items of store should be classified on the basis of investment involved. The items in store are classified into 3 groups or categories:

- i. **Category ‘A’** Includes those items off store that require heavy investment because of price and large requirements.
- ii. **Category ‘B’** includes those items that require substantial investment but not as much as the items of category a
- iii. **Category ‘C’** . It includes those items that do not require much investment. Such items are list costly items. The number of such item is usually large.

b) **Determination of Stock Levels:** In order to guard against under-stocking and over-stocking, most of the large companies adopt a scientific approach of fixing stock levels. These levels are- (i) maximum level (ii) minimum level (iii) reorder level (iv) danger level etc.

Maximum Stock Level- This is that level above which stocks should not normally be allowed to rise. The maximum level may however,

be exceeded in certain cases, e.g., when usually favourable purchasing conditions arise. It is computed by the following formula:

$$\text{Maximum Stock Level} = \text{Re-order level} + \text{Re-order Quantity} - (\text{Mini. Consumption} \times \text{Mini Re-order Period})$$

Minimum Stock Level: It is that level below which stocks should not normally be allowed to fall. This is essentially a safety stock and is not normally touched. In case of stock falling below this level, this is a risk of stop in production Thursday private I should give to the acquisition of fresh supplies.

$$\text{Minimum Stock Level} = \text{Reorder level} - (\text{Normal Consumption} \times \text{Normal reorder period})$$

Re-order Level- This is that level of material at which purchase requisition is initiated for fresh supplies. This level is fixed somewhere wherever minimum labour for stop this is fixed in such a way that by reordering when material falls to this level, then in the normal course of events, new supplies will be received just before the minimum level is reached.

$$\text{Re-order level} = (\text{Max. Consumption} \times \text{Max. Re-order Period})$$

Danger Level- This is a level at which normal issue of material is stopped and materials are issued for important jobs only. This level is generally fixed somewhat below the minimum level.

$$\text{Danger level} = (\text{Normal Consumption} \times \text{Maximum re-order period under emergency condition})$$

- c) **Economic Order Quantity Analysis:** Economic order quantity is also termed as reorder quantity. Economic order quantity is that size of the order which keeps maximum economic in purchasing and any material and utility contribute toward maintaining the material at the optimum level and at a minimum cost.

• Ordering Cost • Carrying Cost

$$\text{E.O.Q.}(q_0) = \sqrt{\frac{2 \times R \times C_0}{C_c \text{ or } C_H}}$$

where,

EOQ = Economic Order Quantity

2 = It is a constant figure

R = Annual Requirements in unit

C_0 = Cost of placing order per order, or Non-carrying cost per order

C_c or C_H = Annual Carrying Cost per unit, or Annual Holding Cost or Carrying Cost percentage \times Price per unit

d) VED Analysis: VED- VitalEssential, disable, analysis used primarily for control of spare parts. The spare parts can be divided into 3 categories does vital, essential and disable, keeping in view the critically to production. The spares, stock out of which event for a short time will stop production for quite some time and where the cost of stock out is very high are known as vital Spears . The spares, the absence of which cannot be tolerated for more than a few hours or a day and the cost of last production is high and which are essential for the production to continue, are known as essential spares. VED analysis made to get the effective results.

Storage of Materials : Storage of material means keeping the materials in safe custody. Proper storing materials is also indispensable to obtain the maximum advantage of materials control. Efficient store-keeping of materials require the consideration of the following points:

- **Location of Stores-** It is usual practice in most of the firms to have a central store. This store is responsible for the handling and unkeeping of materials .
- **Code Number or marks-** To facilitate easy identification of materials, a code number or marks is assigned to item falling in different groups and subgroups . Codes are shorter and precious substitute for a long and imprecise description.
- **Storing of materials and Entry in Bin Card-**Play store keeper is responsible for the storage of materials. Store keeper has to store the materials in the lottery spaces and to maintain materials in a good condition.
- **Stores Control Record-** Store control record is used as a substitute of bin card. In a large organisations, stores control records maintained.
- **Stores Ledger-** Stores ledger may be defined as a record which source information relating to movement of materials in quantity as well as in value i.e.,receipt, issues and and closing balance of materials at a particular point of time. Storesledger is one of the basis record for material accounting.

Stores Records- For stores can accounting, two main record **Bin card and store Ledger aregenerally** maintain.

BIN CARD- A bin is a container in which material is kept. Separate bin cards are maintained by the stock keeper for each item of material in store. Bin card shows the detail of receipt and issue of materials and the balance in stock at anytime. This record is of immense help to the store keeper in controlling the stock position.

A bin card is attached to the Bin, drawer or any other container in which material is stored. An entry is made at the time of each receipt or issue and the New Balance in stock is calculated.

BIN CARD								
Bin No.....						Maximum Limit.....		
Description of the Material.....						Minimum Limit.....		
Code No.....						Re-order Level.....		
Store Ledger Folio No.....								
Unit.....								
Receipt			Issued			Balance		Remarks
Date	Material Receipt Note No.	Qty.	Date	Req. No.	Qty.	Date	Qty.	

Importance of BIN card

- i. The storekeeper is responsible for maintaining the store. Therefore, he should have full knowledge about the stock with the help of Bin card
- ii. Bin card are essential for up to date information of materials because store laser is not keep up to date due to posting of transactions is turn product key. But in a bin card posting is done before the transaction take place.
- iii. the store keeper is a hard responsible for any difference between the physical stock and quantity soon in bin card.If the yin cards are not prepared, if will be difficult for him to keep control over material.

Store Ledger Card:The stock laser is maintained in the cost accounting Department end is on the on off the basis of record for material accounting in a cost system. This record give the same information regarding stores as a bin card in addition it give the money value of materials. Separate ledger for you are maintain in it for each item of material for stop the lasers it may be in loosely for form or a separate binding may be used for each type of material.

Store Ledger Accounts												
Name Of Material.....						Maximum Limit.....						
Bin Card No.....						Minimum Limit.....						
Code No.....						Re-order Level.....						
						Unit.....						
Date	Receipt				Issued					Balance		
	Invoice no	Qty.	Rate (Rs.)	Amount (Rs.)	Req. No.	order no	Qty.	Rate (Rs.)	Amount (Rs.)	Qty.	Rate (Rs.)	Amount (Rs.)

II. **Issue of Materials:** Issue of materials is an important process of materials control. The control of material issue is equally important as purchase and storage of materials. Following steps are involved in the process of issue of materials:

- 1) **Materials Requisition Slip:** A material issue should be authentically authorised. Normally foremen has an authority to draw the materials. For drawing material, he has to fill up the Materials Requisition Slip.
- 2) **Bill of Materials:** A bill of material may be defined as a schedule of all the materials and supplies required for the execution of a s specific work order or job.
- 3) **Records of Materials Issued:** CostAccountsDepartment records the materials issued on the basis of Materials Requisition Slips. This is done in the book known as “material Issue Book.”
- 4) **Materials Returned Note:** Sometimes, some of the materials drawn against a job remain unused in the department after the job is completed. Such materials are returned to the stores through Material Returned Note.
- 5) **Inter-departmental Transfer:** Sometimes the surplus materials drawn against one job can be used against another job in the same department instead of being returned back to the stores.

III. **Valuation of Materials Issued:** Thereare several methods of pricing issue of materials.The various factor pricing issue of material may be grouped under three broad category

- A. **Cost Price Method:** Cost means cost of purchase plus other cost i.e., cost incurred in bringing the inventories up to their present location and condition. Following are the method based on cost:

- **First in First out Method of FIFO Method-** FIFO Method is based on commodity flow approach i.e. inventory which enter the stores first are issued first for stop it means that inventory at the end of the accounting period are the inventory purchased in the last. Thus FIFO Method uses the price of the first batch of material purchases for all issues, until all material from this batch are fully utilised.
- **Last in First Out(LIFO) Method:** LIFO is just the reverse of FIFO. LIFO Leifu is based on the assumption that the materials which are purchase last are issued first hence, the issues are priced at rates paid for the latest lot of materials purchased.
- **Highest-in First Out Method(HIFO):** Under this method it is assumed that the material purchased at the highest price will be issued first for the production work . So, the day on which material is issued to the production Department, material purchase at the highest price up to that day will be issued first.
- **Base Stock Price Method:** Under this method of minimum quantity of material is stocked at fix price this is called reverse stop. Minimum stock is not issued for production. Valuation of remaining balance of the issues material can be done by any method but is only under this method remaining balance of the material is valued on the basis of first in first out thus, this method is a revised form of FIFO.

B. **Average Price Method:** Average Price method is based on the assumption that all the materials in a store are so mixed up that an issue cannot be made from any particular lot of purchase. Average price method maybe using to forms-

- **Simple Average Price Method:** Under this method, the average price is obtained by dividing the total of different prices by the number of prices used in total full shop simple average price method does not consider the quantities of material in stock. the average price, 3rd determined, changes with every consignment.
- **Weighted Average Price Method:** Under weightage average price method, quantities in stock are taken into account. Weighted average price is calculated by dividing the total cost of goods in

stock by the total quantities in stock . Under this method, prices are averaged after multiplying by their quantities.

C. Other Methods

- **Replacement Price Method:** Replacement price is the price at which identical material could be currently purchased or produced stop under replacement price method, materials are issued at a price at which they can be replaced.
- **Standard price method** standard price means predetermined price. Standard price is a notation price and not the actual price foolish of under this method all issues are priced at a predetermined price.
- **Inflated price method:** some materials are subject to a natural ways such as evaporation, depletion sector stop the issue price of such material is inflated to cover these loses.

Short Questions

1. Write short note on 'economic order quantity'.
2. What is VED analysis?

Long Question

1. What is inventory control? Explain its techniques.

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Thank you