

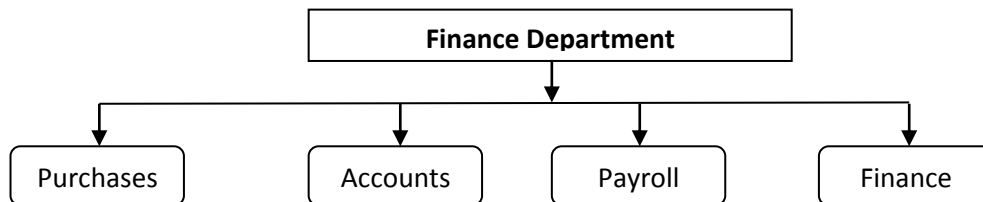
### Inventory Management

Inventory means material that is used as input for production of finished output or rendering of services or for office use and packaging. It will also ensure preparation of accurate statements of the value of inventory consumed by each department/job and final statements prepared according to their needs

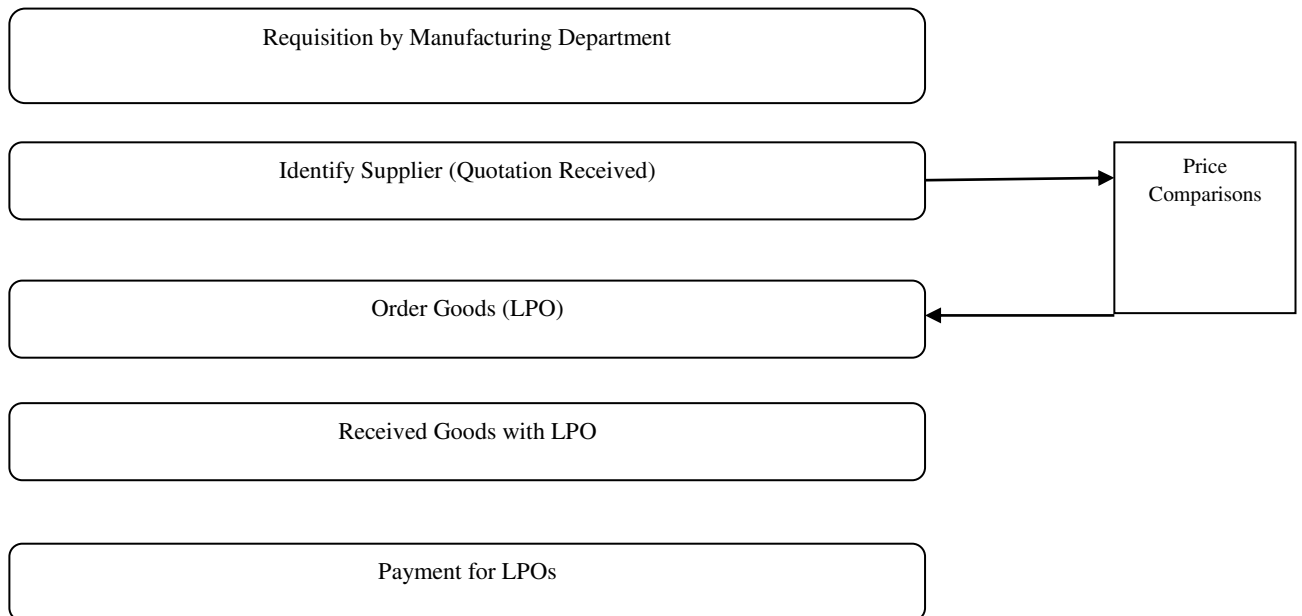
#### Inventory Management

From the inventory management point of view, the following are some important requirements of the effective material control:

- ❖ That no inventory is purchased without proper authority
- ❖ That the quantity of inventory purchased is in fact received
- ❖ That there should be proper storage facilities
- ❖ That no material is issued without proper authorization and the purpose for which the material is required is recorded
- ❖ That the accounts provide a running balance of the value of the inventory on hand
- ❖ Large business have specialized purchase departments for effective inventory control



#### Purchase Process



## Levels of Inventory

- ☉ In order to ensure that the optimum quantity of materials is purchased and stock—neither less nor more
- ☉ The storekeeper applies scientific techniques of materials management. Fixing of certain levels for each item of materials. The following levels are generally fixed
  - ☛ Order level
  - ☛ Maximum level
  - ☛ Minimum level
  - ☛ Danger level

## Order Stock Level/point

- ★ It is also known as Re-ordering level/point in relation with an item of stock
- ★ It is the point at which it becomes essential to initiate purchase orders for its fresh supplies
- ★ Normally, re-ordering level is a point between the maximum and the minimum stock levels
- ★ Fresh orders must be placed before the actual stocks touch the minimum level, so as to take care of lapse in time the placing of the order and the receipt of materials in stores

$$\text{Order Level} = \text{Maximum Consumption} * \text{Lead Time (Maximum)}$$

- ★ *The maximum consumption:* This is the maximum quantity of the material that is expected to be consumed in a day or in a week or in a month time
- ★ *Lead time:* This is the estimated time period in number of days or in weeks or in months, which is necessarily required for placing an order and finally receiving it in the stores

## Maximum Stock Level

- The maximum stock level indicates the maximum quantity of an item of material which can be held in stock at any time

$$\text{Maximum Stock Level} = \text{Reorder level} - (\text{Minimum Consumption} * \text{Lead Time}) + \text{EOQ}$$

- *Re-ordering level:* It is the point at which it becomes essential to initiate purchase orders for its fresh supplies. Normally, re-ordering level is a point between the maximum and the minimum stock levels
- *Minimum consumption:* This is the minimum quantity of the material that is expected to be consumed in a day or in a week or in a month time
- *Lead time:* This is the estimated time period in number of days or in weeks or in months, which is necessarily required for placing an order and finally receiving it in the stores
- *Economic ordering quantity:* It is the level where the ordering quantity will be most economical for organization

**Minimum Stock Level**

- This represents the quantity below which the stock of any item should not be allowed to fall
- In other words, an enterprise must maintain minimum quantity of stock so that the production is not adversely affected due to non-availability of materials

$$\text{Minimum Stock Level} = \text{Reorder level} - (\text{Average consumption} * \text{lead time})$$

- *Re-ordering level*: It is the point at which it becomes essential to initiate purchase orders for its fresh supplies. Normally, re-ordering level is a point between the maximum and the minimum stock levels
- *Lead time*: This is the estimated time period in number of days or in weeks or in months, which is necessarily required for placing an order and finally receiving it in the stores
- *Average consumption*: This is the average quantity of the material that is expected to be consumed in a day or in a week or in a month time

**Danger Stock Level**

- ❖ The danger level is below the minimum level and represents a stage where immediate steps are taken for getting stock replenished
- ❖ When the stock reaches danger level it is indicative that if no emergency steps are taken to restock the materials, the stores will be completely exhausted and normal production stopped

$$\text{Danger Stock Level} = \text{Average consumption} \times \text{Emergency time}$$

- ❖ Generally, the danger level of stock is fixed below the minimum level

**Illustration 1:** What do you understand by maximum stock level, minimum stock level, and re-order level?

Calculate the above from the following data:

Re-order quantity (EOQ)	1,500 units
Lead Time	4 to 6 weeks
Average consumption	325 units per week
Maximum consumption	400 units per week
Minimum consumption	250 units per week

**Solution**

1. *Re-order level* = *Maximum consumption* \* *Lead Time* [maximum]

*Re-order level* =

***Re-order level* =**

2. *Maximum stock level* = *Reorder level* – (*Min consumption* \* *Lead time* [minimum]) + *EOQ*

*Maximum stock level* =

***Maximum stock level* =**

3.  $Minimum\ stock\ level = Reorder\ level - (Average\ consumption * lead\ time\ [Average])$

$Minimum\ stock\ level =$

$Minimum\ stock\ level =$

**Illustration 2:** Following is the information provided by the concerned departments about two components Wood and Steel regarding their replenishment and usage:

Minimum usage ..... 25 units per week each  
 Maximum usage ..... 75 units per week each  
 Average usage ..... 50 units per week each

Re-ordering Quantity	Wood	300 units
	Steel	500 units
Re-ordering Period	Wood	4 to 6 weeks
	Steel	2 to 4 weeks
Emergency Lead Time	Wood	2 weeks
	Steel	1 week

**Calculate for each component:**

- 1. Re-order level
- 2. Maximum stock level
- 3. Minimum stock level and
- 4. Danger stock level

**Solution**

1.  $Re-order\ level = Maximum\ consumption * Lead\ Time\ [maximum]$

Wood

Steel

2.  $Maximum\ stock\ level = Reorder\ level - (Min\ consumption * Lead\ time\ [minimum]) + EOQ$

Wood

Steel

3.  $Minimum\ stock\ level = Reorder\ level - (Average\ consumption * lead\ time\ [Average])$

$Average\ lead\ time = \frac{Maximum + Minimum}{2}$

2

Wood

Steel

4.  $Danger\ stock\ level = Average\ consumption * Emergency\ lead\ time$

Wood

Steel

**Illustration 3:** In manufacturing its Products, a Company uses three raw materials. A, B and C, in respect of which the following apply on monthly basis

Raw material	Max. Usage per unit Product Kg	Min. Usage Product kg	Re-order Quantity Kg	Price Per kg	Delivery Period			Danger Lead time
					Min	Avg	Max	
A	1,000	500	10,000	0.10	2	3	4	1
B	3,000	1,500	8,000	0.30	3	4	5	2
C	2,000	1,000	6,000	0.15	2	3	4	1

**Requirements:**

- (a) Re-order level      (b) Maximum stock      (c) Minimum stock      (d) Danger stock level

**Solution**

a) *Re-order level* =

A

B

C

b) *Maximum stock level* =

A

B

C

c) *Minimum stock level* =

A

B

C

d) *Danger stock level* = *Average consumption x Emergency lead time*

A

B

C

# Further Study and Practice of Inventory Management

Video Lecture (Inventory Management)

<https://youtu.be/LwvWKaeFui8>

Workbook Solution (Inventory Management)

<https://www.accountancyknowledge.com/inventory-management/>

Practice Problems with Solutions (Inventory Management)

<https://www.accountancyknowledge.com/inventory-valuation-problems-and-solutions/>

