

## **CHAPTER - ONE**

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## CHAPTER 1. INTRODUCTION

(A) This Chapter is divided into Part (A) which is the subject matter and Part (B) consisting of methodology.

### A. Inventory Management in Engineering Industry.

Inventory is a detailed list of movable items. But in accounting language, inventory is used to mean the tangible property which are held (a) for sale in the ordinary course of business and (b) goods which are process of production for a such sale and (c) also goods which are currently consumed in the production for such sale of goods or services. Thus inventory means stock of items kept in reserve for certain either for production, or maintenance or for sale. Thus inventory includes raw materials, work in progress, finished goods and spare parts. Raw materials are those input that are converted into finished products and work-in-progress represents semi-finished goods that requires some more work before they are ready for sale. Spare parts are the items required for maintenance of the equipment.

Every business organisation, however big or small, must maintain inventory and it constitutes an integral part of the working capital. It has been estimated that inventory in Indian Industries constitutes 50% to 70% of the current assets. Inventories are significant elements into cost

process. Inventory requires a significant investment not only in acquiring them but also in holding them. Investment in inventories is said to be idle but it is unavoidable in any organisation, manufacturing or trading. For this purpose one requires a careful planning, formulation of policies and procedures appropriate to maintain the inventory at some desired or optimum level. This technique of maintaining inventories at optimum level is known as inventory control.

At this stage it is worthwhile to study three well-known definitions of inventory control.

1. Bogen : Effective inventory control should provide adequate stock of goods at proper quality to meet the requirements of production and sales while at same time keeping the required investment to a minimum. Increase or decrease in the inventory investment must be tested against the effect on profit as well as on working capital needs.
2. Erich L. Kohler defines inventory control as "the control of merchandise, materials goods in process, finished goods and supplies on hand by accounting and physical methods."

3. American production & Inventory control Society has defined inventory control as "The technique of maintaining stock-keeping items at desired levels, whether they be raw materials, work-in-progress or finished products."

Basically there are two approaches for inventory control. One is unit or physical control and the other is value control. Purchase and Production department officials use these words in terms of physical control because they are mainly concerned with the control of physical unit of inventories. On other hand financial executives are interested in value, so they use the term with reference to value control. These two approaches should be co-ordinated. The inventories should be maintained at desired level with the minimum investment of capital for acquiring as well as maintaining them. In addition inventories should be used in time e.g. Finished goods must be sold in the nearest possible future while raw materials must be used in production at the earliest moment.

### **SCOPE OF INVENTORY MANAGEMENT :**

**Inventory Management includes the following aspects :**

- i) Size of Inventory : determining maximum and minimum levels, establishing time schedules, procedures and lot of sizes for new order, ascertaining minimum safety level, controlling sales, production and inventory policies.
- ii) Assigning responsibilities of carrying out inventory control functions.
- iii) Providing for the report necessary for supervising the overall activity in the field of inventory.
- iv) Providing proper storage facilities, arranging the receipts, disbursement and procurement of material.

It is, therefore, necessary that proper co-ordination must be there in the activity and policies of purchase, production and sales departments and effect better inventory control.

### **OBJECTIVES OF SCIENTIFIC INVENTORY CONTROL SYSTEM :**

An inventory control system is to be engineered to achieve the basic purpose for which the inventories are created. The fundamental objective of a good inventory

control system is to be able to determine what to order, when to order, how much to order and how much to carry in stock so as to gain economy in purchasing, storing, manufacturing and setting. These fundamental objectives may be amplified into the following objectives to be considered by the analyst while designing the system.

- 1) **Service to Customers :** Adequate stock of finished product should be maintained to match reasonable requirement of the customer so as to ensure prompt execution of their orders.
- 2) **Continuity of Productive Operations :** Every attempt should be made to ensure the continuity of productive operations through an uniform flow of materials and eliminate the possibility of stock-outs.
- 3) **Effective use of capital :** The system should enable the management to make an effective use of its capital. The investment in inventories should be kept at minimum consistent with the operating sales and financial requirement of the firm.
- 4) **Economy in Purchasing :** The system should enable the management to gain economy in purchasing through quantity buying and favorable market.

- 5) **Reduction of risk of loss :** The possibility of loss on account of obsolescence and deterioration should be minimised. In built checks should be provided to weed out obsolete and non-moving items periodically and automatically.
- 6) **Reduction of administrative workload :** The administrative workload on the purchasing, receiving, inspection, stores accounts and other related departments should be nearest minimum.
- 7) **Administrative Simplicity :** The system should be simple, easy to operate and devoid of tedious calculations.

#### **ESSENTIAL FEATURES OF A GOOD INVENTORY SYSTEM**

following are the essential features of a good inventory system.

- 1) **Proper Classification and Identification :** The inventory items include stock of raw materials, work-in progress, finished goods, spare parts, components etc. For the purpose of prompt recording, locating and dealing each item of inventory should be assigned particular code for proper identification. Then code must be divided or subdivided in the group on any basis (location, nature of item plant etc.) feasible. Spe-

cial efforts should be made to establish an effective control of high value items. ABC analysis is very helpful in this respect.

2) **EOQ and other Levels :** The various levels fixed for effective inventory are minimum level, maximum level, ordering or Re-ordering level, Safety stock level, danger level etc. These levels serve as indices for initiating action on time so that the quantity of each item of inventory is controlled. It is important to note that all these levels are not necessary to follow nor are they desirable for each and every item of inventory. They should be established as the needs of the industry after taking into consideration the factors affecting them. It should also be noted that these levels are not fixed on a permanent basis but are liable to revision in accordance with the changes in the factors determining levels.

3) **Adequate store facilities :** Adequate and well organised warehouse facilities with well equipped proper handling facilities must be there. It need not necessarily be elaborate and expensive such facilities will reduce the wastage due to leakage, wear and tear, rust and dust, and mishandling of materials.



- 4) **Standardisation and Simplification of inventories :**  
For proper inventory control the standardisation of material and product as well as simplification of production line is necessary. Standardisation refers to limiting of production line to definite type, size and characteristics which are considered to be standard by which comparison on evaluation can be made. Specification for component should also be fixed. It will ensure the quality of products manufactured. Simplification of inventory refers to elimination of excess type and size of items. It leads to reduction in inventories and carrying cost.
- 5) **Adequate inventory records and Reports :** In efficient inventory control necessitates maintenance of proper inventory records because various inventory records contain information to meet the needs of purchasing, production sales and financial staff. Any typical information regarding any particular item of inventory may be had at hand for such records. Such information may be about quantity in hand or in transit or on plant, location, unit cost, EOQ reordering point, safety level for each item inventory. Statements, forms, reports etc should be designed in such a way that the clerical cost of maintaining these records must be kept at minimum level.

- 6) **Experienced Personnel :** The last but no the least important requirement of a successful inventory control system is the appointment of intelligent and experienced personnel in purchasing, production and sales departments, Mere maintenance of records and procedure would not give the desired result because there is no substitute for efficient, sincere and devoted personnel. Hence the whole inventory control structure should be managed with trained, qualified experienced and devoted employees.

#### **Inventory Management of GPI**

Ghatge-Patil Industries Ltd., Kolhapur, (henceforth called GPI) is a well - organised and Well - Known established engineering unit in Kolhapur. Its management is moving fast towards professionalism. The Researcher thought of studying inventory management at GPI with the main intention of understanding inventory management practices in a professionally managed company like GPI

#### **(B) Methodology**

##### **Scope & objectives of the Study**

Scope of the study extends to the inventory management practices at GPI. It covers a period of three years ending 31st March, 1994.

Objectives of this study were :

- 1) To study inventory management practices at GPI.
- 2) To make suggestions for improvement, if any.

#### **Methods of Data Collection**

Data are mainly collected from the records of GPI. Data pertaining to production, consumption of raw materials, opening and ending inventories of various items and sales were collected for three years ending 31st March, 1994, for the purpose of ABC analysis data pertaining to 31st March, 1995 was taken as the base. These data (i.e., pertaining to the inventory items on 31st March, 1995) could not be considered for other purposes of analysis as the figures were unandited figures.

Officers at various levels were consulted for clasification from time to time. MIS Department was found to be very useful in providing information and giving clasification whenever needed.

## **Chapter Scheme**

This dissertation is divided into the chapters as detailed below :

<b>Chapter No.</b>	<b>Title</b>	<b>Brief Contents</b>
1.	Introduction	A) Subject Matter & B) Methodology
2.	Profile of GPI	Historical background, organisation structure & brief account of the process
3.	Inventory Management Practices of GPI	A detailed discussion on the inventory management practices at GPI
4.	Evaluation of the Inventory Management practices at GPI	Efficiency & effectiveness of the GPI's inventory management practices are judged.
5.	Summary & Conclusions	Summary of the findings and the conclusions drawn

## **Limitations of the Study**

Work - in - progress constitutes about 50% of the inventory. A study of the methods adopted by GPI to reduce WIP inventory would be very interesting. The Researcher could not do it for want of time.