6. Inventory Analysis and Estimation of Raw Material and Stores Requirement

(i) Cost analysis
   (a) Holding cost
   (b) Stock out cost
   (c) Procurement cost

(ii) Purchase and Store Management
Cost Analysis

The heart of inventory analysis resides in the identification of relevant costs. It is observed that there are various factors whose costs affect the size of inventory directly either advocating to decrease the size of inventory or suggesting an increase in the inventory size e.g. the risk of the manufacturer for losing sales decreases with size of the inventory but on the other hand expenditure on storage will increase. Thus for an effective inventory analysis and control of the system one should have a clear picture about the behaviour of costs. “These costs are various and numerous, depending on the alternatives uses of the funds and resources. The firm’s decision to maintain a particular level of stock are called relevant cost and definitely play an important role in the study of an inventory system.” ¹ These costs are classified as follows:

INVENTORY COST

For any company inventory is an investment, where the capital is tied up in the form of material and goods. Had this capital been free, it could be utilised elsewhere e.g. developing a new product or to buy new equipment i.e. an opportunity cost exists. Thus by holding inventory the organisation forgoes the use of invested capital in some alternative way. Sometimes the inventory investments is made by borrowing money on which interest is to be paid. Furthermore, the inventories for tax purposes are considered to be fixed assets and the amount of tax increases with the size of the inventory. This is generally taken as 10 to 15 per cent.

[158]
Carrying or Holding Cost

The carrying cost is associated with carrying inventory. This cost arises due to many factors which include:

- Storage cost incurred for providing warehouse space to store the product.
- Inventory handling cost incurred for payment of salary to employees.
- Insurance cost against possible loss from fire or other form of damage.
- Interest paid on investment of capital.
- Obsolescence and deterioration cost incurred when a portion of inventory becomes either obsolete or is lost or pilfered.
- Capital cost is calculated in terms of direct expenditure for funds (or interest) or the rate of return that could be obtained by having invested elsewhere the capital tied up in inventory.

Carrying cost can be determined as follows:

\[
\text{Carrying cost} = (\text{cost of carrying one unit of an item in the inventory for a given length of time}) \times (\text{Average number of unit of an item carried in the inventory for a given length of time})
\]

According to Jayant Mittra, holding cost are related to the holding of stock. For example: (a) Loss on interest on investment in inventory (b) Cost of insurance (c) Taxes on inventories (d) Cost of storage space (e) Loss on a/c of breakage, obsolescence, pilferage deterioration etc.
These costs, like ordering costs, are somewhat difficult to determine precisely because the required records sometimes do not exist. These costs are calculated on an annual basis and are expressed as a percentage of average inventory value.

- The cost of carrying inventory decreases inversely as the number of orders increases. The smaller the size of each order, the lower the average inventory carried, and hence, lower the cost of carrying the inventory.

- The cost of carrying inventory varies from one organisation to another depending on the conditions under which it is operating.

Both selected steel plants do not conduct any formal calculation of carrying cost but approximately it is 0.5% of the total average inventory.

**Ordering Cost**

Ordering cost is associated with the cost of placing orders for procuring items from outside suppliers or producing items internally. The cost per order generally includes

- Requisition cost of handling of invoices, stationery payment etc.
- Cost of services which includes cost of mailing telephone calls and other follow up actions.
- Materials handling cost incurred in receiving inspecting and storing the items included in the order.
- Accounting and Auditing.

Ordering cost is independent of the size of the order (or production), rather it varies with the number of orders placed.
during a given period of time. Thus if a large number of orders are placed, more money will be required for procuring the items. Ordering cost may be calculated as given below:

Ordering cost = cost per order \times \text{No. of orders in the inventory planning period}

When items are produced internally, a set up cost is incurred and has the same meaning as the ordering cost as defined above.

Ordering cost is clerical cost of preparing a purchase order, receiving deliveries and paying invoices.

**Example**

(a) Postage telegram charges and telephone bills for placing an order.

(b) Cost of stationary and other consumables required by the purchasing department relating to the number of orders or documentation processing cost.

(c) Costs relating to the number of orders processed and received etc.

(d) Transport cost or additional cost of frequent or small quantity orders.

(e) Intermittent cost of charging orders, rejecting faulty goods.

After this cost incurred on each item an order is placed with the supplier, starting with purchase requisition. This is a fixed cost per lot and, hence a variable cost per item. Ordering (or set-up) cost is independent of the size of the order (production), rather it varies with the number of orders placed during a given period of time and may be calculated as given below:
Ordering cost = Cost per order or per set-up × Number of orders or set-ups in the inventory planning period

It is revealed that both selected steel plants neither calculated carrying cost nor ordering cost formally, as they keep their stock on the basis of JIT.

**Purchase Cost**

It is the actual price paid for the procurement of items. The components of this cost include: (i) Direct Material Cost; (ii) Direct Labour Cost; (iii) Direct Expenses; (iv) Overhead Cost; (v) Profit of the Manufacturer.

The unit price cost of an item is independent of the size of the quantity ordered (or purchased/manufactured).

\[
\text{Purchase cost} = (\text{Price per unit}) \times (\text{Demand per unit time})
\]

When price break or quantity discount are available for bulk purchases above a specified quantity, the unit price becomes smaller as size of order. Thus quantity exceeds the required quantity level. In such cases the purchase cost become variable and depends on the size of the order.

Price of unit × Demand per unit (here unit means bulk purchase price)

**Shortage Cost or Stock Out or Customer Service Cost**

The shortage of items occurs when actual demand cannot be fulfilled from existing stock. The shortage can be viewed into two different ways. (i) The supply of items is awaited by the customers the item are back ordered and therefore there is no loss in sale. (ii) Customer are not ready to wait and therefore
there is loss of sale. In this case shortage cost shall be measured in terms of goodwill loss and lost profit on each unit of the item demanded but not available. Thus these are the penalty costs associated with either a delay in meeting the demand or inability to meet it at all due to shortage of stock. It is an extremely important cost that never appears in accounting record. “Components of this cost may be observed in several ways e.g., in a profit making concern sales lost as a result of stock out, or there may be additional costs resulting from back ordering. Another component may be loss of goodwill due to delay in supply of finished goods”.

Shortage cost in a planning period may be calculated as given below:

Shortage Cost = Cost of being short in one unit in the inventory planning period × Average No. of unit short in inventory planning period

Stockouts imply shortages. If the stockout is internal, i.e., in the production system, it would imply that some production is lost, resulting in idle time for men and machines, or that the work is delayed which might attract some penalty, whereas if the stockout is external, it would result in a loss of potential sales or loss of customers’ goodwill. These costs are usually interpreted in two ways. In the first case where the unsatisfied demand can be satisfied at later date (by means of back orders), these costs usually vary directly with the shortage quantity and delay time. If the

* Average number of unit short = Minimum shortage in the inventory planning period + Maximum shortage in the inventory planning period × Time for which shortage occurs.

[163]
unfilled demand is lost completely (no back orders), shortage costs become proportional to only the shortage quantity. Stock out cost lies between 10-20% more than its normal price in both selected steel plants.

**PURCHASE AND STORE MANAGEMENT**

The organization for inventory management involves planning and programming for purchases, procurement, inspection, handling of materials inside the works and effective control over the inventory. The success or failure of any inventory programme depends to a great extent upon the practices and procedures followed by the purchasing department. “In an industrial organisation purchasing is of extreme importance in the materials management cycle for achieving its twin basic objectives of minimising cost and maximising profit. The average industrial firm spends half of its entire income on purchases.”

Purchasing in a manufacturing organisation includes not only the procuring of material but also making supplies, tools and services available at the right time for the maintenance of equipment and operation of business. The National Productivity Council of India defines the term: “Purchasing refers to the locating and development of sources of supply, market research for purchasing, negotiation prices, calling for tenders, selection of supplier, entering into rate contract and periodical review of the same, issue of purchase orders with specifications and delivery schedules, complying with government regulations particularly with regard to controlled commodities, imported items etc., supplier performance evaluation, preparation of purchase budgets in conjunction with materials planning and inventory control sections and so on.”

[164]
other words purchasing means a policy well planned, properly co-ordinated and converting a wide range of control to the selection of materials sources of supply, the follow up to ensure timely deliveries, it complete inspection for quality and quantity, well planned procedures free from much formalities, and development of up-to-date methods and technique of higher standard and to reveal efficiency and economy.

Purchase Objective

The fundamental objective of purchasing management is to see that materials of the right quality are brought at the right prices at the right time. Both the Steel Plants under study have developed purchase manuals for the practice and procedure of procuring materials.

Chart 6.(i)
Purchase Planning

"Material Planning is the scientific way of determining the requirement of raw materials, components, spares and other items that go into meeting production needed within the economic investment policies." In the steel plants under study it was found that the planning of raw material is being done by the production planning control department (PPC) Depts. RIL and BSSL do their material planning through production planning section and budget section. These sections are headed by a superintendents (PPC) Depts. Material planning and programme affecting so many factors. Basically these factors can be classified into two categories.

**Chart 6. (ii)**

**Factors affecting Purchasing Planning**

<table>
<thead>
<tr>
<th>Micro Factors</th>
<th>Macro Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corporate objective</td>
<td>Price trend</td>
</tr>
<tr>
<td>Seasonality</td>
<td>Business cycle</td>
</tr>
<tr>
<td>Inventory levels</td>
<td>Credit policy</td>
</tr>
<tr>
<td>Working capital</td>
<td>Import policy</td>
</tr>
<tr>
<td>Rate of Rejection</td>
<td></td>
</tr>
<tr>
<td>Lead Time</td>
<td></td>
</tr>
<tr>
<td>Communication system</td>
<td></td>
</tr>
<tr>
<td>Percentage utilisation by plant capacity</td>
<td></td>
</tr>
</tbody>
</table>

*(1) Planning for Raw Materials*

The demand of raw material in both steel plants are based on trend basis.
(2) Planning for Stores and Spares Materials

The consumption of stores and spares varies with the life of equipment and the discipline followed in their operation. Therefore in order to forecast the further requirement of stores and spares, past data along with future plans of repairs, and maintenance have to be considered.

(3) Planning for Import Material

In India steel industry has to import various goods and material to run the plants properly. It is revealed that both plants have to given two months advance payment before taking delivery. BSSL have established company policies for import substitution.

Procedure of Purchasing

In order to complete the purchase deal the essentials of scientific buying are (i) What to purchase (ii) When to purchase (iii) From where to purchase (iv) How much to purchase (v) At what price to purchase. The following chart shows the procurement cycle of both the steel plants: (Chart on next page)

Methods of Purchasing

The mode of purchasing was found more or less similar in the different plants including the two selected for study. Tenders are invited when time permits and the huge money involved. The following are methods of obtaining tenders. (i) Open tender (i.e. through advertisement) (ii) Limited tender (by direct invitation to limited number of firms) (iii) Single tender (by invitation to one firms only) (iv) Oral tender. Generally all methods are used by the selected steel plants but the method of open and limited tenders is being used largely by Indian industries as well as BSSL and
RIL. In selected steel plants purchases are also made through rate contracts and open tenders, but their percentage is low to limited tenders. Limited tender practice is usually applied when the value involved is small.

BSSL and RIL prepare a list of supplier which is called Limited supplier system and tenders for such purchases are sent
This system is the most common method of procurement and about 85 per cent of the purchase cases are finalised through limited tender. Rate contract and repeat order methods are also in practice; repeat order is placed on the basis of an earlier order to meet the requirement for additional quantity of an item or items. In the RIL, all the tenders are opened by the purchase officer only and there is no tender opening committee. Suppliers of their representatives are also not invited at the time of opening of tenders. The purchase officer is fully empowered to take decisions according to the policy.

**Lead Time of Purchasing**

It is the interval between the time an item reaches the order level and the actual receipt of material. Chart no. 6.4 shows an example of that. The monthly consumption of an item is 1,000 and it has a lead time of 7 days when order must be placed and when stock available is sufficient to last for 7 days. This stock will consist of 500 items. (chart on next page)

Any significant lead time is worked out from the time taken for identifying the need and placing of the order, procurement from suppliers, shipping, transport, receipt and inspection of the item. These can be classified as administrative lead time, manufacturing lead time, transport lead time and inspection lead time. The time spent on each of these four stages will vary from item to item and from organisation to organisation. Lead time in India is considerably longer than in industrially advance country. For example in just-in-time method, there is a few hour lead time in Japan while in our selected steel plants it is one week.
LEAD TIME

CHART NO. 6(iv)

[170]
In BSSL steel plant classify the internal lead time as given below:

- Raw Material Stock Item: 7 – 15 days
- Spares: 15 to 30 days
- Non Stock Capital Item: 1 to 3 months

The above details show that total internal lead time lies between 7 days to 3 months but external lead time in BSSL plant is 3 to 6 months for import items.

In RIL internal lead time is as under:

- Purchases Recommendation: 7 days
- Tender and Administrative Approval: 15 days
- Issue of Purchase Order: 3 to 7 days

Internal lead time for stock items is 7 days, spare and capital item taken 1 month to 1½ month while for import items, time taken is 3 to 6 months. It is found through personal interaction with the personnel and authorities that both plants rarely fix any time limit for each stage of purchases. They purchase according to their convenience.

**Receipt and Inspection**

Receipt section in both steel plants are located outside the plant premises with full facility for the transfer of goods to the main stores. “Inspection may be carried out in the Receiving Section or in a separate place adjacent to Receiving Section. Inspection is also carried out at supplier’s premises (a) If suppliers make it a condition, (b) If cash has to be paid before delivery and (c) During the course of manufacture of certain sub-contracted parts of equipment to ensure that manufacture is; being done according to one’s specification.”
there are separate departments for inspection and quality of material checked in laboratory but it was observed that in both plants inspection is not proper and time taken in inspection is generally quite long. Due to this reason RIL faced problem of low quality finished goods and BSSL faced a severe accident in October, 2004.

Store Management

“Stores is a general term describing goods which are kept for use in store houses and stock yards. These goods may be raw materials tools, etc. All these goods are usually intended with manufacturing or service activities, but stores may also cover finished products awaiting dispatch to customers and scraps and wastes held awaiting disposal. The place where stores are kept is known as a ‘stores house’ or store room.” A store is required to handle various types of materials and products depending upon whether it is ment for a manufacturing organisation or a commercial establishment, Finished products in most industries are kept in store rooms before they are sent out to the market. In very big industries, a finished article stores may be separately maintained.

Classification of Stores

Materials held in a store can be classified according to the use they are put to. The advantage of such classification is that it can exercise proper control. “There may be three types of stores, viz. (1) Central Store with centralized buying and centralized handling of stores, (2) Central store with sub-stores having centralized buying and decentralized handling of stores, (3) Independent stores in production department with decentralized buying and decentralized handling of stores.” It is revealed that
both plants have central store system but BSSL plant has central store with sub stores. In BSSL steel plant deals with about 45000 items. All these items have been broadly classified into 3 categories:

- General Supplies (General Raw Material, Wire Rope, Lubricants, Conveyer Ball and Ball Bearing etc.)
- Insured (Imported items i.e. Spare Parts, Capital Items and Stock Items)
- Uninsured (Local Items which are purchased regularly i.e. Gas, Fuel etc.)

RIL have centered store with sub stores and special stores (explosive chemical etc.) having centralized buying and decentralized handling of stores, which hold about 40600 items in all. Materials held in a store can be classified according to the use they are put to. The advantage of such classification is that it can exercise proper control.

**Codification of Stores**

For effective control, it is necessary to classify stores into groups/categories and allot a code number/symbol specially when thousands of items in raw materials, stock and thousands of parts and finished products form the inventory are available in an organisation. “In any stores organisation there are normally two types of items, stock items and non-stock items. Stock items are those that are procured regularly, kept in storage and issued as per requisitions. Non-stock items are those that are procured only upon specific requirements and are issued out at once. It will not be worthwhile to codify the non-stock items; because they are not being handled regularly and it is not advisable to crowd memory with the identities of rarely required items.”
Methods of Codification

The normal method of identifying an article is by its name, but this is not satisfactory as an article can be described by various names. For example, a small part may be variously called a plunger, a roller, a drive pin, a spindle, a trip arm pin, etc. Similarly, a single article may have different types and sizes. All this makes it necessary to have some scientific basis of identification, which is more precise and less confusing. This is achieved by coding store items. “There are different types of store codes designed to suit various needs. These may be based upon the types of store items and the purpose for which an item is used or on any other application of that item.”

Some of the common methods (systems) of store codification are:

- Alphabetical codification
- Numerical codification
- Alpha-numeric method
- Colour codification

“It is quite possible to make a choice from among the several methods of choosing a code. Whatever method is chosen, it should give a logical classification, provide a simple and flexible index and allow for easy addition of new items.”

The steel plants under study codify materials for proper identification. The selected steel plants are following Alpha-numeric system upto 10 digit for raw material and upto 8 digit for store items. It is most effective method of coding store, materials and parts. It is a combination of the letter and number systems. Letters are used to indicate names of materials and parts, and numbers, are used to indicate specialisation (size, dimensions or weight also). The following
examples illustrate a combination of alphabetical and numerical system.

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SS 142</td>
<td>Steel sheet, 14 mm thick II Grade</td>
</tr>
<tr>
<td>SS 101</td>
<td>Steel sheet, 10 mm thick I Grade</td>
</tr>
</tbody>
</table>

BSSL

In BSSL Plant cataloguing in digits has been done for all items. New items are included every year. The materials have been classified keeping in view the computerising indents and purchase orders. It has been found that material classification code has been given while initiating indents for spares, consumables and other materials for procurement through purchase department. The following steps have been taken for numbering in the plant:

(1) The first digit indicates the purchase group code. This number is given by purchase department.

General Indigenous : 0
General Imported : 1
Imported Spares : 2
Indigenous Spares : 3
Project and Capital Item : 4
Roll and Refractories : 5
Import Substitution : 6
Raw Material : 7
Repair and Job contracts : 8

(2) Second digit indicates the responsibility code, e.g.

Stock Control/Service Dept. : 0
Mech. and Maint. Department : 2
Elect. Maint. Department : 3
Refractory : 5
Operational Department : 6

Third and fourth digits indicate the department code. Fifth digit indicates the financial years.
Sixth and seventh digits indicate material classification code.
Eighth, ninth and tenth digits indicate the indent Serial No. of material classification code.

RIL

It has been observed that in this plant also applys more or less same coding system, but numerical coding system is not so adequate as in BSSL for identifying indigenous as well as foreign material.

Tools Stores Procedure

“In a factory, tools are a large and valuable stock. Storage inspection and maintenance of such tools involves considerable expenditure and careful control. Tool stores serve as stores for storage and issue of tools.” The procedure of issue and maintenance of bin cards is the same as in case of raw materials, stores and spares in both selected. In RIL tools are issued to the workers in exchange for metal tokens issued to them according to their token numbers. When the tool is returned by the worker, the metal token is given back to him.

Record Keeping of Stores

Due to difference in size of nature and items various plants adopt different methods of store keeping, rules pertaining in
Company Act affecting inventory records, accounts and government policies and restrictions imposed in various forms on inventories. Thus, no uniform method of inventory records and accounting can be prescribed even for different units of the same type of manufacturing industry. The records which are usually kept by the stores department of both selected plants may be grouped as Bin card and Stores ledger. Both the selected steel plants are using store ledger to record inventory items in stores, Bin card for tools and Store ledger for raw material items.

**Management of Inventory Handling System**

Inventory handling refers to any movement of materials, whether the movement is vertical or horizontal or both and also whether the movement is being accomplished by mechanical means or hand. The material may be in unit loads, individual pieces or batches. “Material handling is the art and science involving the movement, packing and storing of substances in any form. It covers the whole chain of handling from acquisition of bought out items upto and including delivery to the customer. Material handling contributes substantially to the hidden cost in the industry which every thinking man should try to minimize.”

Thus material handling functions enjoy a pivotal role in the production engineering. The relative percentage will vary according to the type of product, plant target production method, availability of resources like men, machines etc. “The importance of material handling under the modern production system has increased to such an extent that the production of material handling equipment itself has become a major industry of its own.” The following equipments are used for inventory handling:

[177]
Two Wheel Hand Truck or Sack Truck
- Three or Four Wheel Hand Trolley
- Left Trucks
- Trolleys on Rails
- Small Mobile Jib Cranes
- Large Mobile Jib Cranes
- Overhead Travelling Cranes
- Ramp (Fixed, movable and detachable)
- Tripod Stand
- Chute
- Roller Conveyer
- Fork-lift
- Tractor and Trailer, Jeep and Trailer, Lorries

BSSL Plant has new, most modern, equipment for material handling. The Plant has separate Traffic departments which are responsible for handling materials. The material handling cost of BSSL is 0.5 per cent to 1.0 per cent. In RIL material handling system is not upto the mark. Its equipment of handling are outdated. Due to this reason the plant has faced a severe accident and breakage in year 2003-04*. It is revealed that both steel plants do not adopt the rationalized technique of evaluation of material handling. The ratio analysis is the most suited technique of evaluating the effectiveness of material handling system. The following ratios serve the purpose:

* The company suffered a major accident in the factory premises causing severe damages to plant and machinery. Resulting complete discomruption of production facilities and erratic problem of power supply. (Annual report 2003-04 p. 8)
(i) Time Spent Ratio

= 

(ii) Cost Effective Ratio

= 

(iii) Equipment Utilization Ratio

= 

(iv) Material Handling Labour Ratio

= 

(v) Direct Labor Handling Loss Ratio

= 

(vi) Movement Operation Ratio

= 

It should, however, be emphasized that the efficiency of material handling mainly depends on the following factors:

(i) Efficiency of handling methods employed for handling a unit weight through a unit distance;
(ii) Efficiency of the layout which determines the distance through which the materials have to be handled;
(iii) Utilization of the handling facilities, and
(iv) Efficiency of the speed of handling.

It is suggested that both steel plants should make a periodical evaluation of their material handling systems, on the lines discussed above.

[179]
Transportation System in Steel Industry

The transport systems which operate within the Iron and Steel industry are the railways, road transport, and inland water transport; sea transport operates in an indirect way providing an alternative means of transport. Railways are the prime transporting agency for this bulk transport of materials. It can be assumed that 70 – 80 per cent of the movement of materials will be by railway wagon and rest by road. Export of iron and steel industry may take place through the ports of Kandla, Okha, Cochin and others besides Mumbai. Export the inventory management of selected steel plants can not be realised without Indian railways gearing up for the moving materials and finished goods. The steel plants are almost dependent on the Railway System for the movement of raw material and finished steel.

It is revealed that both plants have a traffic department. Raw material enter directly to the production section as soon as received from the supplier. They are sent to directly delivered at consumption centres to avoid double handling. These materials are received at the consumption centres by wagons and are delivered by automatic conveyer belts. During the manufacturing stage materials are handled automatically through cranes, conveyer belts, lifts etc. The finished products i.e. steel rods, sheets, and flats etc. are transferred from the factory to stockyard and godowns.

It is found that both steel plants have adopted a similar procedure for material handling but both the plants do not calculate any ratio regarding inventory handling. It is found that some inventory handling equipments are very outdated like machines, cranes etc.
Management of Dead Inventory

“Every organisation has some stock which is of no further use. Therefore, money invested on such stock cannot be realised or fully realised. However, it occupies space which could be better utilised for storing other items.” 

It can be categorised into surplus, obsolete and scrap inventory.

In BSSL Plant a list of those items is prepared which are in stock but have not been issued during the last 3 years. They have categorised these items as non-moving items and send them to the user department or consuming shops and ask them whether such items could be useful in future. If the answer is negative, such items are declared obsolete. In this context, a distinction can be made between obsolete and surplus materials in that the latter can be consumed at some future time, while the former is unlikely ever to be consumed. Thus surplus materials arise because they are in excess of a reasonable rate of consumption, due to wrong forecast at the procurement stage. Scrap of the following type was found held by Steel Plants:

- Unserviceable material (like tools, equipment and other assets)
- Empties, and other packing materials
  Scrap-both ferrous and non-ferrous
  - Waste products of the plants (like used oil, and cuttings, trimmings, etc.)
  - In respect of serviceable surplus items of the other stores declared obsolete, need their may be other plants which connected through correspondence.
Writing Off Dead Inventory

"Writing off dead inventory means declaring or sanctioning a particular stock items as unserviceable and of no value to the store or organisation. It also means sanctioning by necessary authority to remove the items from the record and stores and places it in separate scrap and waste bin, rooms or yards."  

When the material has been categorised as surplus, it is the Purchasing Department to take charge of it. Disposal of surplus can take the following routes, to enlist the possible channels.

- Circulation within the concern
- Return to supplier
- Direct sale to another firm
- Sale to dealers or brokers
- Sale to scrap consultants
- Sale to employees
- Donations to educational institutions

It is observed that in both selected steel plants under study disposal of scrap surplus and obsolete inventory are sold through traders and auction. In auction a larger number of items are sold on a single day and disposal prices range between Rs. 2000 to Rs. 10000 per MT.*

* These figures relate to the year 2006 and undergone have in an upward revision view of the recent hike in the price of steel prices.
References

4. Stara and Miller, Inventory Control Theory and Practice, prentice Hall of India, Delhi, 1969, p. 236.